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Textile World

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The Inventor Nears His Goal

WE HAVE been publishing in these columns a timely series of articles by M. C. Miller entitled "Full-Fashioned Hosiery on One Machine Still the Inventor's Goal."

That the inventor is rapidly nearing his goal is indicated by the fact that within the last two weeks no less than three different companies have announced the production of single-unit full-fashioned hosiery machines.

It is still too early to indicate what, if any, modifications may have to be made to this new equipment to insure the most nearly perfect product. One of the three manufacturers himself sounds a note of conservatism when he states in his announcement that his company can deliver a single-unit machine "if the trade wants it"—and adds that "we are still of the opinion that the single-unit machine is in its infancy."

However, it is *not* too early to predict with certainty that one more dream of the inventor is sure of fulfillment. There may be months, or even years, of further development before all kinks are taken out, but we are definitely approaching the day when all full-fashioned hosiery will be knit on a single machine.

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Facing that fact, it is pertinent to inquire just what this new development will mean.

Commercially, of course, it will prove upsetting for a time. The industry must pay the inevitable price of technological progress. Money will have to be expended, gradually, on replacing or altering existing equipment. Hosiery manufacturers should not be panic-stricken, however. This change is not going to come over-night. It takes time to produce enough machines to satisfy an industry; the adjustment can be allowed to materialize in an orderly manner. Eventually, the ability to produce as good a product, at a materially lower price, should bring a broader market to the industry as a recompense for these growing pains.

Technically, one point should be emphasized. It will be expressed by Mr. Miller in the concluding article of his series, to be published in Textile World next week, as follows: "It would be folly in my estimation for the manufacturers of full-fashioned hosiery to lessen the value of their product by accepting inferior heel structures, or in fact any structure which does not at least have the merits of the present one." Mr. Miller does not say, nor do we, that the product of the new machines just announced will be featured by that shortcoming. He states positively that the successful single-unit machine is a certain eventuality. He merely sets up a standard whereby the developments toward that end may be judged—and modified, if need be, to insure complete success.

We have spoken of reduced cost as one of the advantages of the single-unit machine. At least as important is the fact that it should enable the production of a stocking without the fabric variation which seems inevitable under the two-machine method.

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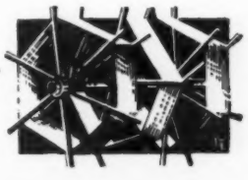
Once more, the textile industry is taking a step to "shorten the route" between raw material and finished product. In so doing, it reveals again the enterprise and mental flexibility which are commanding the attention and respect of the industrial world today.



The Week in Textiles

Night-Work Ban Gains . . .

IMPORTANT ACCESSORIES to the declaration of policy for the voluntary discontinuance of night employment of women and minors were reported by George A. Sloan, president of The Cotton-Textile Institute, who recently completed a personal survey of many mill centers in the Carolinas and Georgia. . . . . On Wednesday 74.5% of the cotton spindleage was reported as committed to cooperation on this matter.

Warns Wool Goods Trade . . .

THAT THE TREND toward plain effects in men's wear suitings, clearly evident during recent months, is just as harmful to clothiers as it is to mills, is the warning sounded by Bart Murray, of The Wool Institute.

Canada Lowers Yarn Tariff . . .

CANADA HAS lowered the import duty on cotton yarns for the manufacture of sewing thread, effective from Jan. 2, 1931. . . . . According to the new item (No. 797) in the Canadian customs tariff, "yarns, wholly of cotton, No. 40 and finer, not more advanced than singles, when imported by manufacturers for use exclusively in their own factories in the manufacturing of sewing thread—British preferential, free; intermediate, 10%; and general, 15%." The general tariff applies to imports from the United States and, whereas the former rate varied, according to classification, from 20% to 25% ad valorem, the duty is now only 15%.

How Textile Machinery Is Sold . . .

MANUFACTURERS OF TEXTILE machinery and parts sell principally directly to textile manufacturers, states Bureau of Census, in connection the 1929 Census of Manufactures. Of the total sales amounting to $112,114,000, 88.7%, or $99,384,000, was made in this way. The remaining sales were made as follows: 9.4%, or $10,553,000, to dealers, and 1.9%, or $2,177,000, to manufacturers' sales branches. Of the above total sales, 2.6%, or $2,863,000, was made through manufacturers' agents, selling agents, brokers, and commission houses.

Cotton Mill Trend Upward . . .

THE DOMESTIC MILL situation may be variously stated, according to the phase of the situation which is considered or emphasized, the New York Cotton Exchange Service reports. From the standpoint of manufacturing margins, the mill position has become less favorable during the last few weeks, for easing cloth prices in the face of rising cotton have reduced margins materially. From the standpoint of stocks and unfilled orders for goods, the Service continues, the position of the mills improved appreciably in January, for sales were in excess of output, but during the last week sales were running closer to production and so the industry as a whole has probably only about held its own. . . . . With regard to mill activity, the trend since the turn of the year has been clearly upward, following the shutdowns around the holidays.

British Talk Wage Cut . . .

NO IMPROVEMENT in British cotton trade dispute is reported by our Manchester cable. Operatives will not sanction any negotiations on eight-loom system, and deadlock continues. . . . . Employers are acting so far with restraint awaiting developments, but a section of their members would like to take the opportunity to extend demands to cover general reduction in wages and increase in hours which they say will have to come soon.

Strikes Help Hosiery—Maybe . . .

AN ODD ASPECT of the present drive among women's full-fashioned hosiery producers to curtail output and thus solve their overproduction problem, comes to light, in the report from Philadelphia that

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The Business Outlook

STOCK-MARKET stories have blossomed on dreary front pages this week like sudden surprising crocuses under the sooty snow. Well, who knows? After a long, hard winter shut up in the barn, on very little hay, with the bears prowling outside, the lean herd of commerce can't be expected to sniff synically at the snort of a bull, even though it be a mere technical snort. Evidences of much trade improvement are still slight but perhaps sufficient to excuse the eager turn of sentiment. A rising backlog of steel orders, somewhat better than seasonal levels in carloadings, bank debits, currency in circulation and commercial loans, a firming of some commodity prices and increasing bank bond investments are encouraging. Yet our index of general business for the first week of February at 76.8% of normal (preliminary) shows little change. Passing of the bonus bogey, settlement of relief squabble and prospects of early lifting of the congressional incubus probably have helped betterment of feeling.—*The Business Week.*

The Textile Outlook

BETTER spirit is evident in many branches of the textile field, but where business has improved sellers explain its volume as merely a balance to previous lean weeks. Buyers, they say, have let coverage of needs go unduly long and are trying to get three months production in one month in some branches of the industry. It is still recognized that permanent improvement rests largely with the general business situation but intelligent merchandising and conservative manufacturing will do much to improve the tone and permit profit from such rallies as appear from time to time. . . . Cotton goods are softer on some lines but the rise in raw cotton if held will not permit such a turn to go far. Wool goods have been really active for spring with some mills turning to three shifts to get out Easter goods. Knit goods are firming in some branches but silk goods are hesitant due to a setback in the rise of raw silk.

4,000 operators are idle, due to numerous strikes in small full-fashioned hosiery plants. The labor disputes have affected the full-fashioned output picture in Philadelphia to a considerable degree. Exact figures are not available, but executives of mills still operating said the reduced output had helped them to maintain their prices. . . . . Thus it appears that the strike weapon, while doing injury to the individual hosiery knitter, does good to the industry as a whole. Full-fashioned hosiery is notoriously overproduced, which has brought prices down to almost unprofitable margins. As noted elsewhere in this issue, the leading firms have taken the situation in hand and are waging a determined drive to hold down production to actual sales.

Safe in a Cotton Mill . . .

"THE COTTON industry is the safest of the major industries, according to figures compiled by the National Safety Council," declared J. Foster Smith, agent of Pequot Mills, Salem, Mass., during his remarks as toastmaster at the annual dinner and meeting of the New England Industrial Nurses Association in the 20th Century Club, Boston, recently. . . . . "Education and the universal use of modern safeguards on machinery have reduced loss-time accidents in cotton mills to a point where the industry leads in safety for its workers. I rejoice in the advances made in the social and hygienic condition of the working man due in good measure to your teachings and ministrations."

Canada's Wool Clip Larger . . .

CANADA'S WOOL production for 1930 is placed at 21,016,000 lb. by the Dominion Bureau of Statistics as compared with the revised figure of 20,283,000 lb. in 1929. . . . . Although the quantity is greater the value is considerably less than previous year, being $2,522,000 for 1930 against $4,057,000 for 1929. The Bureau states that prices fell 30 to 40% between the two years and are now lower than for any year for which Canadian records exist. . . . . The Bureau adds that improvement of flocks is increasing the clip of medium and fine combing grades.

The New Year in Cottons

IN ONE sense, the cotton goods industry started the new year right. It sold 18.3% more yardage in January than it produced, according to the figures of the Association of Cotton Textile Merchants of New York.

The production rate, however, needs watching. Weekly output is creeping up; it was approximately 8% larger in January than in December. It might be argued that this increase is justified, since sales increased, but it should be remembered that this is the time of year to build up a reserve of orders which will help to maintain a comparatively stable rate of production during leaner periods. Excessive speeding up of plant operations by a minor portion of the industry can nullify the courageous efforts being made by the majority to maintain a well-balanced position.

Then, too, the prices at which some of the product has been sold, have been far from adequate. The market presents an erratic picture. There will be a week of good-volume business followed by a lull. Instead of regarding the latter as perfectly normal, factors attempt to force the market; as a result, uneconomic prices become effective.

It is difficult to understand the psychology back of this. So far as we can see, there is no cause for panic just now. There is no reason for pushing the market—unless, of course, manufacturers have started 1931 in the belief that they have got to have 100% production all year. It would seem that the old defeatest attitude still persists in some quarters, and that sellers overlook the fact that a new market condition has been created.

It has been stated that the trade is a little tired of reference to the "statistical position." In our opinion, fault should be found, not with excessive use of it, as a term, but with insufficient use of it, as a guide. To date, we know of no other basis for predicating market action.

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Details of this month's statistics follow:

Production during January amounted to 202,149,000 yd., or at the rate of 50,537,000 yd. per week. Sales during January were 239,106,000 yd., equivalent to 118.3% of production. Shipments during the month were 210,597,000 yd., or 104.2% of production. Stocks on hand at the end of the month amounted to 355,514,000 yd., representing a decrease of 2.3% during the month. Unfilled orders on Jan. 31, 1931 were 317,465,000 yd., representing an increase of 9.9% during the month.

Full-Fashioned Hosiery Industry Determined to

Cut Surplus

By John Black

Assistant Editor, TEXTILE WORLD

THE full-fashioned hosiery industry has started a war to cut down its surplus. For the first time since overproduction and cutthroat competition began to assume menacing proportions, several years ago, the industry shows signs of a real desire to fight its way to stability. It is too soon to wave flags or wax enthusiastic, but current indications are decidedly promising. Thanks to an arduous and relentless drive by the National Association of Hosiery and Underwear Manufacturers, full-fashioned producers have commenced to think in terms of true profits, and to make production tally with demand.

"Manufacture against order only!" was the slogan adopted by the National Association last fall; response was slow at first, but when the year-end approached, bringing the sinister prospect of a carry-over of 5,000,000 doz. pairs, the producers sat up and took notice. A few important units closed for a month at Christmas; others curtailed drastically. The drive took on new impetus after New Year and mills again were advised against producing for stock. By mid-January 40 establishments had lined up on the side of curtailment; they continued coming into the ranks at the rate of about 15 per week, and the beginning of February found 70 firms subscribing to the policy of curtailment. National Association officials are emphatic on the proposition, and are determined to keep up the campaign.

But let us depart from figures for a moment and view the situation more broadly. Full-fashioned mills are being influenced by their banks to drop the ruinous policy of producing in anticipation. The industry unquestionably is astir on the proposition; it is giving more attention to the issue of stocks versus sales than ever before. The National Association reports a steady daily flood of letters from manufacturers, some, who have already curtailed, expressing enthusiastic approval of the campaign, and others offering voluntary pledges that they will hold production down to actual orders.

The significance of the movement is more in promise than performance. It is a long-distance rather than a temporary policy, as John Nash McCullaugh, managing director of the association, points out, and the real benefits of it will be a matter of years. However, full-fashioned hosiery manufacturers are not accustomed to think in terms of years; they think in terms of weeks, even days, and this very limited vision offers a serious handicap to the present campaign. Encouraging as are the results to date, they are mighty meager when measured in terms of the trade as a whole; in terms of production they represent only a small percentage. Many full-fashioned mills, even including "race-horse" establishments which lead in their own divisions, have failed to ally themselves with the movement, and are still producing for stock. These firms follow the ancient policy of throwing big stocks on the market at low prices, relying on low overhead to make up the price differential.

But a new feeling is rapidly manifesting itself, plus a promising readiness to face the facts frankly. This is particularly evident in the attitude adopted by manufacturers who have curtailed toward those who have not. Hitherto this presented an almost insurmountable obstacle to curtailment agitation, as producers hesitated to curtail when they saw their competitors producing to capacity and enjoying the fat sales that low prices—made possible by low overhead—invariably brought. They didn't analyze the thing down to net revenue; the gross was too alluring and it blinded their eyes to true profit. Now the more foresighted manufacturers are inclined to resist the appeal of volume sales at cutthroat figures; they refuse to get excited when competitors achieve volume business through clearance selling, because they appreciate that such a policy means inordinately low net profits. The wiser ones prefer to produce to order, to hold to list prices, and to rely for their profits on the greater margin this policy makes possible.

However, maximum success of the campaign is absolutely dependent upon maximum observance of the "produce to order" principle. The main hope now is that the impetus gained in the drive will force other mills into line. In any event, the movement is a healthy and constructive step; it is the first sledge-hammer blow at a condition which threatens to put the bulk of the industry "in the red" unless quickly remedied. Meanwhile, there are other signs of full-fashioned improvement; producers talk of raising prices, the rise to depend upon a further rise in raw silk quotations. Such a development would have a powerful psychological effect all along the line. Dr. George W. Taylor, of University of Pennsylvania, who is doing notable work in accumulating and interpreting full-fashioned hosiery statistics, reports that stocks of full-fashioned hosiery in mills as of Jan. 1 were 600,000 dozen pairs lower than on the same day in 1930. From Philadelphia also comes the slightly ironic report that numerous strikes have curtailed output, thus helping the industry as a whole though penalizing individual mills.

Recent figures show that the full-fashioned surplus has been cut to 4,000,000 dozen pairs. Officials of the National Association estimated that a normal surplus for their industry would be 2,000,000 dozen pairs. There is a wide gap between these figures, but every unit pledging to curtail brings the goal just that much nearer. The full-fashioned hosiery industry has turned in the right direction; the main point now is to keep going!

Wool Dealers Greet L. J. Noah at Their Annual Banquet

Lionel J. Noah, new president of American Woolen Co.

LIONEL J. NOAH, new president of the American Woolen Co., was the chief guest of honor on the occasion of the 19th annual dinner of the Boston Wool Trade Association held at the Copley Plaza Hotel, Thursday evening, Feb. 5. Introduced to the trade at the close of the dinner by William S. Febiger, president of the Boston Wool Trade Association he received a most cordial greeting, as well as a musical salute from the "Woolverines," the wool trade double quartet.

Wool dealers and a large number of mill men as their guests, 600 in all, enjoyed a fine social evening together.

President Febiger's address in welcoming Mr. Noah to Boston was in part as follows: "Present at this gathering are many manufacturers, some are members of our association, some are guests. Without them our trade could not exist. In most cases these manufacturers are not only our business friends, but also our personal friends, well and intimately known to us. On this occasion we have with us a guest whose successful achievements of the past are known to many of us, but since our business relations were in different fields, we have not had the opportunity to know him personally. He is now connected with the organization that is vital to our interests and we hope that this evening may be the beginning of a personal friendship that will be of pleasure to all and of mutual advantage."

Others at the head table were Moses Pendleton, vice-president and general manager of the American Woolen Co.; Franklin W. Hobbs, president of the National Association of Wool Manufacturers; Herbert K. Webb of Philadelphia; W. W. Lufkin, Collector of the Port; Jacob F. Brown, Samuel G. Adams and Albert W. Elliott, all past-presidents of the assocation; Robert T. Turnbull, vice-president and F. Nathanial Perkins, secretary of the association; William L. Kleinz, president of the Chicago Wool Trade Association.

As in other years the wool dealers and their guests were entertained by a program from within the membership of the trade. The Woolverines furnished their wonted share with solos from Walter J. Gillis, A. Perry Grover, James A. Montgomery, and William E. Allison. Allison, Gillis and Grover contributed to a skit on "Radio Celebrities and New Flashes" in which Dan MacDonald showed a high ability as impersonator. His bit included an appreciated line of satire on members of the trade and on the Federal Farm Board. The Philadelphia trade provided a clever variety team in Messrs. Webb and Ott. The program was under direction of Bob Nichols, and Ralph L. Harlow acted as director of the "Broadcast over Station WOOL."

National Association of Wool Manufacturers Holds Annual Meeting

THE 66th annual meeting of the National Association of Wool Manufacturers was held in Boston, Feb. 11. Reports of officers and committees were read, followed by election of officers and directors and a general discussion of the organization's activities. The principal executives were reelected.

In addition to those reelected to the board of directors, Robert J. Leonard, treasurer of the Holden-Leonard Co., and Alexander S. Neilson, treasurer of the Barre Wool Combing Co., were added to the board. Alfred E. Colby, treasurer of Pacific Mills, was elected vice-president.

Officers elected were as follows: Franklin W. Hobbs, president; Nathaniel Stevens, Addison L. Green and Alfred E. Colby, vice-presidents; Walter Humphreys, secretary and treasurer. The following were elected to the board of directors: John C. Abbot, Edward J. Abbott, Albert C. Bowman, James L. Braman, Jacob F. Brown, Thomas T. Clark, William R. Cordingley, Louis B. Goodall, Arthur S. Harding, George C. Hetzel, Frank B. Hopewell, Randall B. Houghton, George E. Kunhardt, John T. Lawless, Robert J. Leonard, James R. MacColl, William Maxwell, Oliver Moses, Alexander S. Neilson, David Oakes, C. Arthur Root, C. Brooks Stevens, and Max W. Stoehr.

Slashing, Weaving, and Machine-Shop Problems

Discussed at Divisional Meeting of Southern Textile Association

R. J. Jennings, chairman, Alabama-Mississippi-Louisiana Division, Southern Textile Association, who presided at Montgomery meeting

PROBLEMS of the weave room, slasher room, and the machine shop were discussed at the winter meeting of the Alabama-Mississippi-Louisiana Division of the Southern Textile Association, held at the Whitley Hotel, Montgomery, Ala., Jan. 30. R. J. Jennings, Lanett, Ala., chairman of the division, presided at the meeting.

Discussion of questions relating to weaving, which consumed the morning session, was conducted by John H. Howarth, Lanett, Ala., while the afternoon session on mechanical problems was in charge of Walter C. Taylor, Charlotte, N. C., secretary of the association.

High-Pressure Lubrication

High-pressure lubrication on looms was thought to offer considerable promise, but only a few members reported any experience with this system and no definite conclusions were drawn. Very satisfactory results were obtained with high-pressure lubrication installed on twelve looms at every point, according to one member, but the installation was such a recent one that a statement on its advantages would be of little value.

W. L. Underwood, overseer of weaving, West Point Mfg. Co., Shawmut, Ala., stated that he was "very well impressed" with results obtained on 24 looms equipped with high-pressure lubrication at every point except the cams and the picker shafts. After operating one loom for about 100 hours with one lubrication, the bearings appeared to be well lubricated. High-pressure lubrication was said to be very satisfactory for the sand roll.

Stretch of Yarn in Slashing

In discussing the amount of stretch in yarn on the slasher, Chairman Howarth stated that about 2½% stretch was usually obtained on his slashers running 12s, 14s, and 17s yarn, with ends ranging from 3,000 to 5,000. His method of computing stretch was to measure the number of yards going into the slasher from the back and compare with the number of yards coming out at the front. "I have heard more than one man say that he gets 4½%," he said, "but we are running about 2½% of stretch on slashing."

It was pointed out that "40 fluidity starch" from one manufacturer would not always correspond to the same specification from another starch producer. However, any reputable starch concern can duplicate the starch a mill requires. In ordinary work, it was found that about 210 lb. of starch was used for 250 gal. Other members stated that they used about a pound of starch to the gallon.

To avoid brittleness and to retain elasticity in the warp, about 6 or 7% moisture content in sized yarn was considered about right. One member stated that if the warp is "baked" too much, it will not regain its original breaking strength.

In discussing the proper speed for operating slashers, one member stated that his speed on 26s yarn, 1,600 ends, using two cylinders, was 45 yd. per min. Another mill was running slashers on 14s yarn, 1,950 ends, at about 30 yd. per min., while on 15s yarn, 5,000 ends, a speed of 17½ yd. per min. was said to be fast enough.

H. D. Agnew, superintendent, LaFayette (Ala.) Cotton Mills, Inc., asked the following question: "Is the moisture content of your yarn as it comes from the spinning room of any interest whatever to the slasher room man?" It was the consensus of opinion that any moisture content not in excess of that allowed by the

trade (7%) would be entirely satisfactory for slashing. However, C. L. Mangum, Avondale Mills, Birmingham, Ala., stressed the fact that the proper amount of moisture in the spinning will enable the mill to manufacture better quality cloth.

Temperature controls were unanimously recommended for use on the size box, but none of the members present had full set of controls on their slashers, including size boxes, kettles, and cylinders. "The benefits of controls on the size boxes," Chairman Howarth said, "are such as to make them practically necessary."

Cloth Varies in Width

The amount of variation in the width of cloth on plain work on Model "E" Draper looms was the next subject for discussion. C. H. Warren, Draper Corp., stated that variation within $\frac{1}{4}$ in. of the specified width would be considered "doing pretty well." The variation in width was said to be more pronounced with a friction let-off, or any let-off that must be adjusted.

T. H. Rennie, resident vice-president, Avondale Mills, Pell City, Ala., said: "The question of variation in the width of a piece of goods depends upon a great many factors. If you have a beam with a crack in it, you will get a variation in width of goods; and if your sand roll or your cork roll, as we call it, is not taking up properly, you will have variation in the width of goods.

"The only thing I have ever found to prevent variation is eternal vigilance, looking after the looms all the time. I have always made it a rule to have a man go over the looms at least four times a day with a measuring stick, and find out where each loom is set."

At this point, Mr. Calhoun asked the following question: "Now I understand about the vibration, which would cause some variation and some breakage, but running the same sley goods on a wide loom and a narrow loom, I have more trouble with warp breakage on the wide loom. The breakage is mainly through the center. Can anyone give me some information on that?"

Replying to this question, Mr. Warren, of Draper Corp., said: "I think Mr. Calhoun is making goods on his looms heavier than many people here are making. Consequently, he has some goods that have a greater percentage of breakage on wide looms from the center of the warp than he has on his narrower looms because of that vibration of the drag roll and whip roll. Where he gets that vibration has an effect on his yarn, as he expresses it, and caused the greater percentage of breakage. The only remedy is to stiffen the whip roll or drag roll so as to prevent the vibration which you do not get on the narrower looms."

John Baker, overseer weaving, Tallassee (Ala.) Mills, stated that by avoiding too much tension and by having the bearings regulated on the stands, it is possible to prevent some waste caused by variations in run outs on section beams. Another member suggested weighting the beams from the box back evenly, rather than to have all the weight on the bottom beam. Yardage counters on warpers were thought to be necessary when many different sizes of beams must be made.

C. V. Vickers, overseer of weaving, Avondale Mills, Alexander City, Ala., stated that he had experienced some trouble with selvages. Although he had tried different whip rollers and sand rollers, the cloth was sometimes tight on one side and slack on the other. Mr. Warren replied, "The best suggestion that I could make to you is to see that your looms are set up right. See that your take-up roll, whip roll, and harness are level, and all that. There is this fact: that the tighter your harness is after your yarn is closing on your shuttle, before it gets out, or as it goes in, the greater the tendency to stretch the yarn on the selvage." Another member suggested that the creel of the slasher might be out of line. This was found to have caused trouble in more than one instance.

Following the luncheon at the Whitley Hotel, short talks were made by T. H. Rennie, resident vice-president, Avondale Mills, Pell City, Ala.; D. B. Herren, secretary, Montgomery Chamber of Commerce; E. W. Camp, head of the textile school at Alabama Polytechnic Institute, Auburn, Ala.; and Walter C. Taylor, secretary of the Southern Textile Association.

Recent progress in the development of the new textile school at Auburn, Ala., was described by Mr. Camp, who invited the division to hold its next meeting there. He urged the mills of Alabama to take advantage of the laboratory facilities at Auburn.

Selection of Valves

The first topic in the discussion of mechanical problems was: "Compare the advantages and disadvantages of metal disk and composition disk globe and check valves, and state instances in which either type is superior."

The consensus of opinion was that on all valves up to 2 in., for either steam, water, or air at less than 150-lb. pressure, the composition disk is better than the metal disk. It was pointed out that any cutting action which occurred, would affect only the composition disk. "Very few of the mechanics and very few of the supply houses," said Mr. Vinson, "ever go into details as to what a valve is going to be used for. If you write out an order for a valve, you merely state the figures, number, style, and size of that valve, and rarely ever give the manufacturer or dealer the information as to what this valve is going to be used for. A lot of failures are caused from that one thing."

V-Belt Drives

It was the unanimous opinion that when a V-belt drive wears out, an entirely new set of ropes should be installed instead of trying to replace one rope at a time. It was the usual practice to save unbroken ropes and match them with other worn ropes. To avoid undesirable slippage, it was found necessary to watch the tension in the V-belt drives very closely, allowing about $\frac{1}{2}$ to 1 in. deflection. Mr. Horsley stated that he recently visited a mill where 600 cards were equipped with V-belt drives. The mill was still running the original belts on those cards and had been running them four years.

The final question for discussion was the following: "What should be the true relationship between the mill and the mechanical department? How can the mechanical department decrease the amount of supply parts used by other departments?" In reply to this Mr. Whatley stated, "One of the best ways to decrease the amount of supplies used is to get the life out of them after you get them, whether you have made them in your shop or purchased them. I know of nothing better than close cooperation between overseers, second-hands, section men and mechanics in the shop. I think that when a job comes down to the shop and the master mechanic sees where it could have gone longer with the proper treatment, he should get together with the overseers and talk it over, and possibly save a good many more jobs from coming down."

Textile Chemists Meet at Greensboro

TECHNICAL discussions, including an interesting paper on the dyeing of rayon yarns, and an address by Hill Hunter, purchasing agent, Proximity Mfg. Co., Greensboro, N. C., featured the regular winter meeting of the Piedmont Section of the American Association of Textile Chemists and Colorists, held in that city, Jan. 31.

Samuel L. Hayes, Hartsville, S. C., chairman of the section, presided at the banquet and business meeting which were held in the main ball room of the O. Henry Hotel. The local committee on arrangements, composed by R. M. Mitchell, chairman, R. W. Glenn and J. D. Sandridge, provided an excellent program of entertainment.

Chairman Hayes announced the members of the sectional committee for 1931, as follows: S. I. Parker, Clearwater, S. C.; R. M. Mitchell, Greensboro, N. C., and Malcolm MacKenzie, Charlotte, N. C. The section also unanimously approved an invitation extended by A. R. Thompson, Jr., Charlotte, N. C., sectional secretary, to the A. A. T. C. C., to hold its annual meeting with the Piedmont Section in 1932.

H. A. Barnes, superintendent, Proximity Print Works, of Greensboro, who was elected vice-president of the A. A. T. C. C., at the last annual meeting in December, 1930, was an honor guest at the banquet.

Hill Hunter's Address

Touching somewhat generally on economic conditions in his address on "Purchasing for Textile Mills, and Some of Its Commercial Aspects," Hill Hunter, purchasing agent for Proximity Mfg. Co., and other units in the Cone group, declared that any improvement that does appear in the economic status of American business will first be felt in the textile industry.

The requirements of textile mills, usually bought by the purchasing agent, were classified by Mr. Hunter into three major groups:

1. Materials which become component parts of the manufactured product. (Examples: Starch, dyestuffs and chemicals.)

2. Materials essential to plant operation. (Examples: Coal, lubricating oils, paint and mill supplies.)

3. Items applied to capital accounts. (Examples: Buildings, productive machinery and auxiliary mill equipment.)

Where the proper cooperation exists within the mill, according to Mr. Hunter, it is essential for the large plant to centralize the purchasing of chemicals, dyestuffs and other materials for the dyehouse. He contended that a man who looks after the operation of extensive dyeing operations cannot have the time to attend to the multitudinous activities involved in purchasing such materials. Buying dyestuffs in large volume, it was pointed out, has a great deal to do with getting a better price. The standardization of dyestuffs tends to increase the volume that can be purchased in a single transaction.

"Fundamentally," he said, "the buying department of the business is also a selling department, money being the commodity disposed of. Anyone can exchange a dollar for a piece of merchandise, but making the money go the maximum distance is not so easily done. Just as some salesmen strive to make their merchandise appear desirable, the purchasing agents should make their money look bigger and better; that is, they should standardize as far as possible to bring their volume up to an impressive point, pay bills promptly, making the credit phase attractive, build up a reputation for fair dealing and make friends in the trade."

Following the address by Mr. Hunter, an inspirational talk on "Contacts in Life" was given by Rev. A. B. Conrad, pastor of the First Baptist Church, High Point, N. C. The program was brought to a close by a technical paper on "The Dyeing of Rayon Yarns" by D. O. Gryder, Southern Dyeing Co., Burlington, N. C., which was followed by a round-table discussion.

Dyeing of Rayon Yarns

Mr. Gryder's paper, in part, was as follows:

"Invariably the different brands of rayon dye differently due to the chemical structure of the fiber. Cuprammonium rayon possesses an affinity for dyestuff that easily distinguishes it from the other fibers. The rapidity with which this fiber takes up the dye makes it positively necessary to retard the dye to prevent streaky dyeings. This may be done by starting a cold bath with the addition of soap or ammonia and gradually bringing the temperature to 150° F.

"Preparation for dyeing plays a very important part; particularly in machine dyeing. The machines must be loaded uniformly, of the right tension, and the right quantity for each tier. For slow exhausting and level dyeing colors, the r.p.m. should be low. This causes less agitation of the fibers; therefore less breaking of the filaments. In the case of basic or vat colors, which seem to be the most difficult for levelness, it is best to have a higher r.p.m. to insure more turnovers per minute, as this class of dyes exhausts very rapidly.

"Scouring or wetting out of rayon is important in the case of light shades, but in the case of dark reds, blues and blacks it is not necessary, thereby eliminating one operation. The highly absorbent powers of the rayon gives thorough penetration the first two or three minutes in the dyebath. In the event that scouring is done, 30 minutes at 150° F. with a good soap or oil should be sufficient. (*Continued on page 56*)

Attractive Fancy Stitches

Can Be Made on Plain-Stitch Outerwear Machines

By J. B. Relyea

Consulting Knitting Specialist, Philadelphia

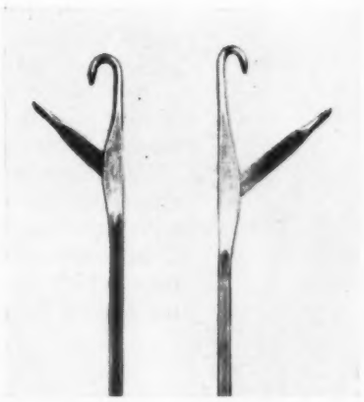
IN THESE days of multi-feed pattern-wheel machines, the knitter with a lot of plain-stitch machines is unfortunate unless he can succeed in producing that seldom obtained "something new."

A knitter who has an open-head Stafford & Holt machine, for example, can develop many straight patterns. For instance, he can use a long-latch needle in place of a pattern wheel to hold a double stitch. If the machine has eight feeds, many patterns can be made by changing colors with the striper. The only change that must be made in addition to adopting the long-latch needle consists of filing down the changing fingers of the cam so they will not throw the needles too high but will raise them just high enough to clear the short latches.

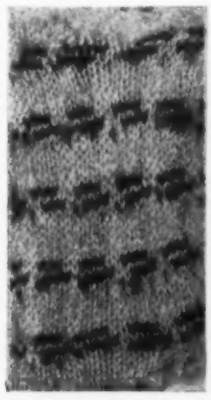
If a dress skirt is being made and a distinct border is wanted, the colors can be changed at the desired width. If a body is being made of navy blue with red dots, a border, say 3 in. wide, can be made with red body and dark dots. Arrange the chain to throw in and out at the desired colors, keeping in mind that the changing fingers throw only far enough to clear the short latches and hold the stitches on the long latches.

A ribbed machine used for men's cuffs can be arranged to make many patterns for dress goods or ladies' sweaters. This machine will have all cams working; that is, it is possible to work some cams separately—provided, of course, the machine has the chains necessary to make a French welt. This machine could be set to tuck or hold one or more dial stitches, and, with proper block on the loose ring, could be arranged to work with high, middle, or low chain links, knitting plain, tucking, or running blank as desired on every other feed. (This particular machine has a striper on every other feed.)

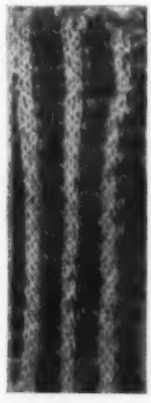
I recall one instance in which a mill made particularly good use of these cuff machines. The mill owner had attended the Philadelphia knitting show and seen goods that he would like to make. He urged his knitter to get busy on his cuff machines. The knitter ordered long latches, both dial and cylinder, and all sizes of chain links. As a start, he changed the cylinder needles to have three regular and two long-latch needles. Every other cylinder cam on an eight-feed machine was arranged by the blocks on the loose ring to raise its needles high enough to clear the regular needles at any point desired, according to the arrangement of the pattern chain. The striper was set to change every third revolution. A 2/20 worsted was used. A black body with jockey-red pattern was made, the red being changed by the striper to Kelly green every third course. The border (of the skirt only) was made three times the width of the body course. The dial was changed to hold the long-latch needle between the two long-latch cylinder needles, and this was set by chain to act only on the red yarn, all needles knitting on the green. This pattern was afterward used for ladies' sweaters and ran two seasons. And, believe it or not, when this same pattern was later made on a twenty-feed pattern-wheel machine with the dial needle out, it lacked the bunched appearance but was otherwise similar.



Magnified view of long- and short-latch needles, which make possible considerable fancy work when combined on plain-stitch machines



Fabric made on open-head machine



Fabric made on pattern-wheel machine

This knitter also started a set of open-head machines on a two-in-and-two-out long-latch pattern. This was a cheap cotton pull-over. On an eight-feed machine with all-striper attachment, he ran two colors at a time, changing every other course. There were four colors. The body color was always in, and the chain was made up to knit ten courses of color and five of plain body. By "plain" is meant the regular jersey stitch.

Another pattern on these open heads, which ran a season in a New York mill, was made by arranging two long-latch and three regular needles; then one long, one short, and one long; and finally a repeat of the three regular and two long latches. The fingers were filed to change the cams only enough to hold the long latches and clear the regular needles. Sometimes just one hard push of the file against the finger will be plenty—possibly too much.

When the fingers are set, they should be tried out by power, for sometimes the jack acts differently when the machine is actually running. If a plain jersey stitch is wanted in the pattern, the double end may be added to the finger of the feed used, and this added piece filed to clear the jack at all the chain links, except at the link that hits the added piece. Any combination of yarns and any arrangement of needles can be used on these open heads.

Satin-Derivative and Crepe Weaves Used in Narrow Fabrics

By Edwin J. Gibbons

When we began publishing this series of articles on the design and construction of narrow woven fabrics over a year ago, we stated that we were confident no literature ever printed on the subject would approach this treatise in breadth or value. We are sure that by this time those readers who have followed the series faithfully will agree that we did not overestimate its worth. We find that, besides our narrow-fabric readers, many wide-goods designers and weavers are evincing interest in Mr. Gibbons' articles. Many valuable installments of this work are scheduled for coming issues.

THE simplest methods of ornamenting the satin weaves are by the use of two or more colors in the warp when employing the warp-effect satins, and by the use of two or more colors in the filling when employing filling-effect satins. The use of two or more colors in both warp and filling is not effective with a single-effect satin because one system of threads is always practically invisible.

Double Satins

Double satins are formed from regular warp-effect or filling-effect satins by the addition of one or more extra points of interlacing to the initial points of interlacing. The term "double satin" is applied to these weaves regardless of the number of additional stitching points. The additional raisers or sinkers may be placed on any block or blocks adjacent to the initial points of interlacing; or, if the additional interlacings assume the form of floats, one end of each float should be placed adjacent to an original stitching point.

Interlacing in double-satin order results in a tighter weave, adds to the strength of a material so woven (particularly when the extra stitches are located obliquely to —i.e., at one corner of—the initial stitching points), and diminishes to a certain extent the naturally long floats which are characteristic of satin weaves.

In constructing double satins the number of harnesses upon which the design should weave must not be altered, nor should the original satin effect be disturbed.

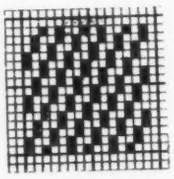


Fig. 1. Filling effect with extra raiser

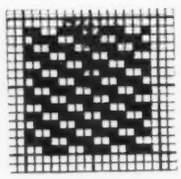


Fig. 2. Warp flush with extra sinker

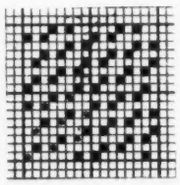


Fig. 3. Extra raiser at one corner

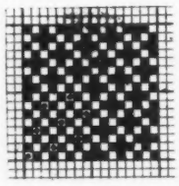


Fig. 4. Raisers added at top, bottom, and both sides

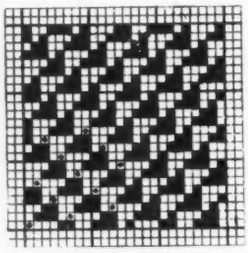


Fig. 5. Five extra raisers

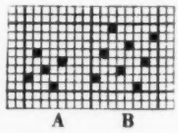


Fig. 6. Clear break

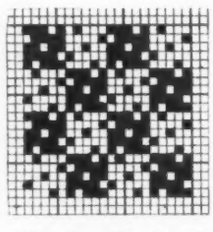


Fig. 7. Combined warp and filling effects on plain-weave motif

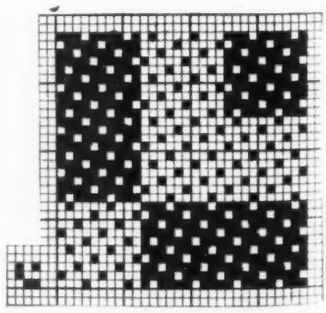


Fig. 8. Employing a different motif

Fig. 1 shows the five-harness filling effect satin, above the original raisers of which have been added an extra raiser. Three repeats each way are shown. The initial stitching points of the first repeat are represented by dots. Fig. 2 shows three repeats each way of the five-harness warp-flush satin in which an extra sinker has been added to the right of each original sinker.

Fig. 3 shows one method of adding an extra raiser to one corner of the initial stitching points of the eight-harness filling effect satin. Two repeats each way are shown. Fig. 4 shows the effect produced by using the eight-harness filling-effect satin as a base and adding raisers to the top, bottom, and both sides of the initial stitching points.

Fig. 5 shows two repeats each way of the twelve-harness filling-effect satin, to each initial stitching point of which has been added five extra raisers.

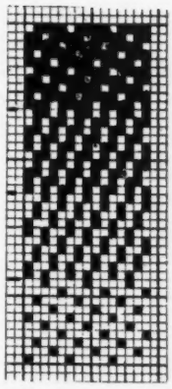


Fig. 9. Shading from filling effect to warp effect

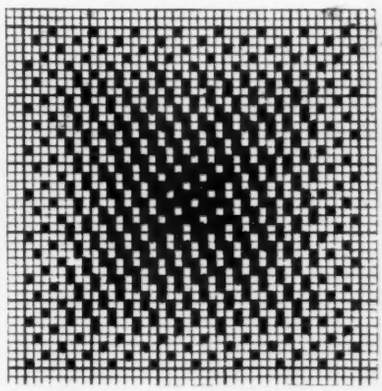


Fig. 10. Transition both warp-wise and filling-wise

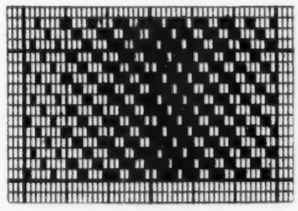


Fig. 11. From filling to warp to filling

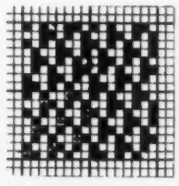


Fig. 13. Granite weave derived from eight-harness satin

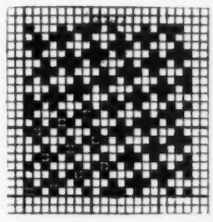


Fig. 14. Granite weave derived from ten harness satin

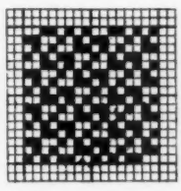


Fig. 15. Crepe alternating two ends of plain with two of two-two warp rib

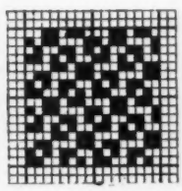


Fig. 16. Crepe weave

Fig. 12. Effect obtained by shading filling-wise

Clear Breaks in Satins

Clear breaks in satins are formed by combining the warp effect and filling effect of a satin weave in such a manner as to cause the stitching points of one effect to occur opposite to the stitching points of the contrary effect. To accomplish this opposite counters must be used for the two effects. In other words, if a rising number of two is used for the filling effect of a five-harness satin, three will be used as the rising number for the warp effect.

For best results the stitching points in the initial repeat of the weave selected should not occur at any one of the four corners of the design. Fig. 6 illustrates the idea. At *A* is shown the proper location of the stitches for a five-harness filling-effect satin; at *B* is shown the proper location of the stitches for an eight-harness filling-effect satin. The combination of the two effects of a satin is often executed according to a motif. With contrasting colors in the warp and filling very effective patterns may be produced.

Fig. 7 illustrates the proper method of combining the warp effect and the filling effect of the five-harness satin. The two effects are here combined according to the plain-weave motif.

Fig. 8 shows another design in which the five-harness satin weave is employed. Each block in the motif represents ten ends and ten picks.

Shaded Satins

Satin weaves may be shaded from the filling effect to the warp effect by increasing by successive groups of ends or picks the number of extra raisers added to the initial raisers; or from the warp effect to the filling effect by increasing by successive groups of ends or picks the number of extra sinkers added to the initial sinkers.

To shade from filling effect to warp effect, the procedure is as follows: After laying out the space required for one repeat of the weave, the entire area is filled in with the filling effect of the satin selected. The space is then marked off into equally or unequally sized groups of ends or picks (or ends and picks if the shading is to be both warp-wise and filling-wise) according to the effect desired. The first space is allowed to remain as is. In the second group one extra raiser is added to the top, bottom, or one side of the initial raiser; in the third group two extra raisers are added, etc., until the warp effect of the satin weave is obtained. After this the order may be reversed; i.e., the extra raisers may be dropped in the successive groups of ends or picks until the filling effect is obtained.

Fig. 9 shows the transition of the five-harness filling-effect satin to the warp-effect satin by groups of ten picks. Fig. 10 shows the same satin in which the transition is effected both warp-wise and filling-wise. Circles and other figures may be treated in like manner.

In narrow fabrics, however, where in the majority of

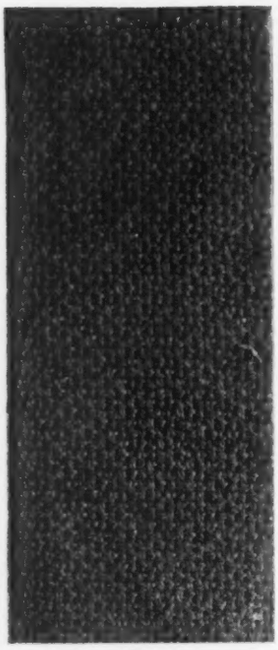


Fig. 18. Tubular crepe-weave webbing

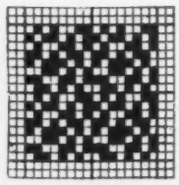


Fig. 17. Another crepe

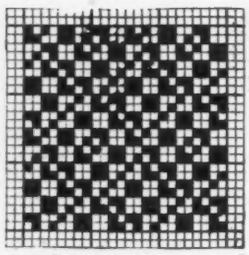


Fig. 19. Weave for Fig. 18

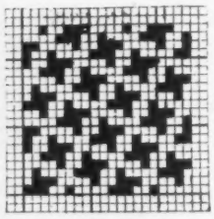


Fig. 20. Small figures in satin-weave order

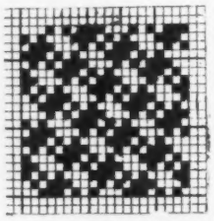


Fig. 21. On same principle as Fig. 20

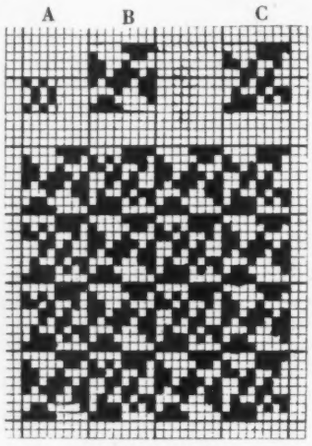


Fig. 23. Weaves B and C combined according to A

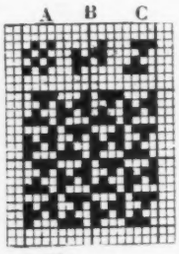


Fig. 22. Small figure turned and inverted

instances the number of warp ends per inch exceeds the number of picks per inch, and where in the satin weave this is particularly so—the proporiton of ends per inch to picks per inch often being as great as three to one—shading warp-wise is not usually practicable. The ends are so closely crowded that the effect of an additional raiser or two is almost negligible. Shading filling-wise must be resorted to for best results.

Fig. 11 illustrates the transition of a five-harness satin from the filling effect to the warp effect and back to the filling effect, the proportion of ends to picks being as two is to one.

Fig. 12 illustrates the effect produced in a suspender fabric by shading filling-wise. The weave used in this instance is the ten-harness warp-flush satin, two picks in a shed—one used for the back, and the other for figuring. The result is practically a five-harness satin.

Granite or Crepe Weaves

The principal characteristics of a good granite or crepe weave are a rough, broken-up appearance, the absence of visible twill lines, and even-sidedness. Any order of interlacing embodying these features, and in which the warp or filling float do not exceed four ends or four picks is suitable as a base for crepe weaves.

Satin Base

When derived from a satin base, seven or more harnesses are usually employed. If the satin weave used will permit, small figures or other weaves may be imposed on the floats of the satin weave.

In construcing granite weaves from a satin base it is usually advisable first to paint in two repeats each way of the weave to be used as a foundation and then add a sufficient number of raisers to lend the effect desired. To insure even-sidedness, it is best, perhaps, to select a satin weave requiring an even number of harnesses, such as the eight-harness satin, the ten-harness satin, etc., and to have the number of raisers in each group equal to one half the number of harnesses normally required for the satin weave selected. Figs. 13 and 14 are illustrative of the foregoing.

Fig. 13 shows a granite weave derived from the eight-harness satin by adding an extra raiser to the top, bottom, and right side of the initial stitching point. The original raisers of the first repeat of the weave are represented by dots. Fig. 14 shows a granite weave derived from the ten-harness satin weave by adding an extra raiser to the top, bottom, and both sides of the initial stitching points.

From Bases Other than Satin

Fig. 15 shows a crepe weave formed by alternating two ends of plain weave with two ends of the two-two warp-rib weave. Figs. 16 and 17 are representative of other crepe weaves.

Fig. 18 illustrates a tubular webbing in which the order of interlacing is crepe weave; and Fig. 19 shows the weaves employed by this webbing. Two repeats each way are shown.

Small weaves or figures placed in satin-weave order often produce novel effects in crepe weaves. Figs. 19 and 20 are examples of this type of crepe weaves.

Another method of constructing crepe weaves from bases other than satin weaves is to form clear break lines between small blocks of figures arranged according to a motif. The different blocks may consist of different figures, or the selected figure may be such that when given a quarter turn or inverted (raisers replaced by sinkers and vice versa), or both turned and inverted, and placed adjacent to itself, clear break lines will be formed.

Fig. 22 illustrates an instance where a small figure has been both turned and inverted and the resultant figure alternated with the original figure in plain weave order to form the design. At *A* is shown the motif; at *B* the original figure; and at *C* the figure after being inverted and given a quarter turn.

Fig. 23 shows the crepe weave formed by combining weave *B* and weave *C* according to the motif *A*.

* * *

This article is the ninth of a series on the design and construction of narrow fabrics by Edwin J. Gibbons, instructor in textile design at Samuel Slater School, Pawtucket, R. I. Mr. Gibbons reserves all rights. Previous articles, some in more than one installment, appeared Nov. 16 and Dec. 28, 1929; Jan. 25, March 1, April 5 and 12, June 21, Aug. 2 and 30, and Nov. 15, 1930.

Offers Silk Association Aid in Fabric Styling *for Retailer*

THE relation of the textile manufacturer to the department store was an outstanding topic of discussion at the twentieth annual convention of the National Retail Dry Goods Association, held last week at the Pennsylvania Hotel, New York. From the manufacturer's point of view, interest centered on the Piece Goods and Domestics Meeting of merchandisers division held Feb. 5, which considered the question: Is the manufacturer and converter of fabrics neglecting the retailer in the matter of styles? As implied in the question, there is considerable dissatisfaction among retailers regarding manufacturers' policies in selling to the piece goods buyers.

The chief address on behalf of the silk weaver was made by Thomas B. Hill, president Eagle Silk Co., New York, and president of the Silk Association of America. Mr. Hill submitted the whole issue to a searching analysis, and concluded by offering several suggestions, the principal of which was a proposal that the N.R.D.G.A. and the Silk Association jointly appoint a committee to study style trends and to keep members of both organizations informed of their findings. The committee would comprise from five to seven persons from each association, the individuals preferably having a knowledge of style requirements and trends; the committee would meet periodically, and digest style tendencies, reporting back to the parent bodies certain recommendations.

The meeting was notable for the spirit of frankness and willingness to cooperate which prevailed. Benjamin M. Weiss, merchandiser manager of Gimbel Brothers, New York, was chairman, and he opened with a strong plea for fuller cooperation between the manufacturer and the retailer. The chairman's talk served as an excellent preliminary to the review by Mr. Hill of the specific points involved. In opening, Mr. Hill denied the claim made by some that silk manufacturers give the cutters-up the lion's share of preference as regards styling; he said that the mill not only shows parallel lines to both groups, but "in addition usually finds it necessary that these lines be augumented by special fabrics for the retail trade, because of the special requirements of their piece goods departments."

Mr. Hill continued:

"For the garment manufacturing trades, the color lines are somewhat limited and when presented to the retail trades, there is an additional styling requirement brought about through the augmentation of color lines necessary to meet retailers' requirements. Then, also, manufacturers styling a comprehensive and broad line of fancy merchandise will have a number of designs confined to certain houses in the cutting-up trade and in most instances, when this occurs, the silk manufacturer reserves the right to present these confined designs for sale to the retail trade, therefore it is evident that in relation to the styling of merchandise by the silk manufacturer, the piece goods department of the retailer has a more comprehensive selection of both plain and fancy merchandise than any other trade.

"A number of silk manufacturers do not seriously cater to the retail trades, and I think you are familiar with the reasons. The volume business does not exist in the piece goods with the retailer in the same proportions as with the cutter-up. Nevertheless, we of the silk industry are anxious to be advised of any requirements necessary for the improvement of our relations with each other. As an indication of this may I point out to you the degree of cooperation that the silk manufacturer has given you in enabling you to effect your hand-to-mouth buying policy during the past few years. In this connection, the silk manufacturers are carrying adequate stocks of merchandise, well assorted in colors, and in many instances the supply of finished merchandise is supported with a supply of gray goods ready to be dyed up.

"With regard to the question, 'What the retailer can do to cooperate with the manufacturer in the securing of style consideration.' I suggest that your association and the Silk Association each appoint from five to seven persons who have a knowledge of style requirements and trends and who will meet periodically for the purpose of determining style trends and to properly inform the members of our Associations with the results of their conclusions.

"Finally, from the manufacturer's point of view—'What the manufacturer would like to do and how the retailer can operate in removing obstacles,' I will summarize a few points for your consideration. First—We think the merchandise executive has in recent years too drastically extended the use of mechanical control over the silk piece goods buyer, both in connection with style and in quantity purchases, and especially so as regards advance buying. I suggest silk buyers be clothed with more liberal powers, both as to style and quantity. Second—Frankly, we would very much like to see the retailer carry a larger supply of fabrics, with a wider assortment of colors and a greater variety of styles. We believe that a careful survey would show that the present limited stock condition means loss of sales.

"Third—There has been too much stress placed on bargain sales to the detriment of staple and well styled lines of merchandise. This is not to the best interest of all concerned.

"Four—The increase and request for small cuts and small orders means an increased expense to both the manufacturer and retailer.

"Five—We would like to see the retailers place more emphasis on the word 'Silk' in connection with the types of merchandise presented, such as crepes, prints, chiffons, etc. We believe that such a policy would prevent any misinterpretation on the part of the consuming public as to the nature of the merchandise advertised.

"Six—If you ask us what else there is we would like to have you do, our answer is, that you consider very seriously returning to the policy of placing in advance some proportion of your season's requirements. The benefits derived would be tangible and would enable the manufacturer better to stabilize the operation of his mills and produce the kind of fabrics required."

Modern Practice in Dyeing Cotton Cops

(*Continued*)

By H. Marsden

Best results in cop dyeing depend to a considerable extent on proper design of equipment, method of circulation, and manner in which the cops are placed on the spindles. In the first part of this article (Dec. 30, 1930) Mr. Marsden described briefly the present-day practice in dyeing cotton cops; in this instalment he continues with a more detailed discussion of the various factors which insure satisfactory results. It appears that many of the principles governing the construction and operation of cop dyeing machines are equally applicable to other types of package dyeing equipment.

SPINDLES used in cop dyeing are sometimes made of iron, but more usually of a non-corrodible alloy. They consist of two parts: the nipple, which has a taper thread to screw into the wall of the cop cylinder; and the perforated tube, which is sweated into position in the nipple. From the sketch of a typical perforated spindle shown in Fig. 5, it will be observed that the perforations are not of the same size or shape.

In designing a spindle the makers endeavor to satisfy the following principle: "When liquor is pumped through a spindle, the pressure at each of the perforations is directly proportional to the thickness of the covering material."

How far they have succeeded is demonstrated by the simple experiment of connecting a spindle to a water tap by means of a rubber tube, and observing the flow of water. It will be seen from Fig. 6 that where the cop

Fig. 5. Perforated Spindle

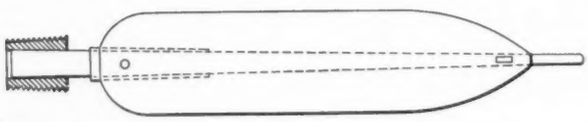


Fig. 7. Correct position of cop on spindle

is of uniform thickness, the issuing streams of water are identical; whereas in the taper portions of the cop, the streams of water decrease in volume and pressure. It is thus apparent how essential it is that the cops be placed in their proper position on the spindles, and that the spindles and their perforations fulfill the requirements of the particular cops in work. Provided the cops are spun exactly to standard, any defects which occur during dyeing not due to the dyestuff or manipulation, may be attributed to faulty placement of the cop on the spindle. The correct position of the cop on the spindle is shown in Fig. 7.

Methods of Circulation

The various designs of perforated-spindle cop dyeing machines have many different arrangements of pipe lines, according to the designers' ideas as to the method of circulation which gives the most satisfactory results. Cop dyers themselves have widely differing views on the subject. The various methods of circulation can be classified as follows: (1) One-way circulation in which no reversing gear is fitted. (2) Two-way circulation fitted with reversing gear. (3) Opposite direction of liquor flow. (4) Same direction of liquor flow, depending upon the position of the pump and the arrangement of the pipe line.

The diagrams in Fig. 8 illustrate clearly the four possible methods of liquor circulation. Machines built on the one-way system are usually of the plate type, and the liquor is forced from the inside of the cop to the outside. The users contend that any attempt to reverse the flow of liquor leads to the outside of the cop being unevenly dyed. On the other hand, many cop dryers contend that circulation must take place in both directions through the cop to obtain the most satisfactory results, and reversible machines are most commonly met with in practice.

In view of the many conflicting opinions met with

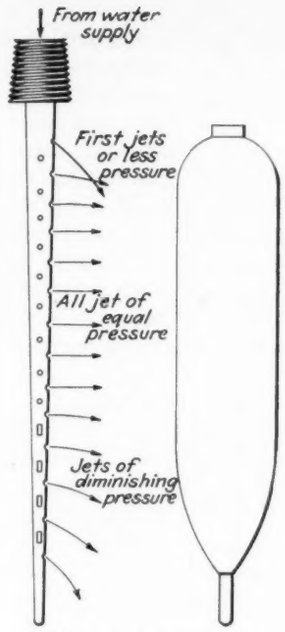


Fig. 6. Jets from spindle

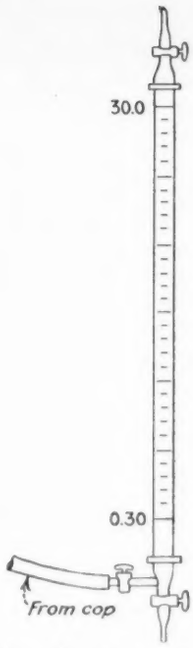


Fig. 10. Instrument for reading comparative pressures

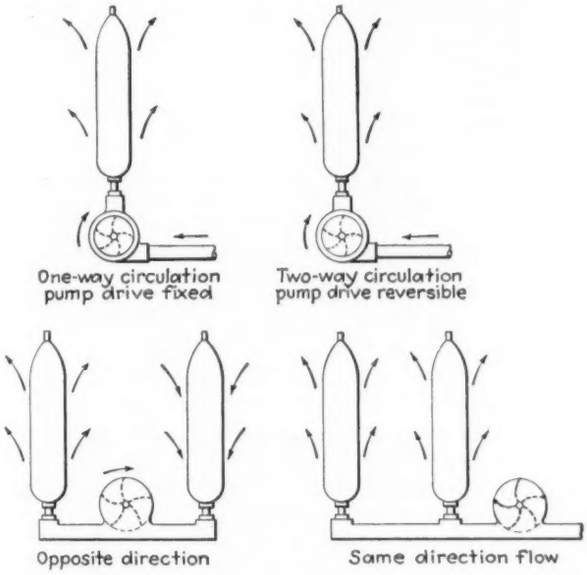


Fig. 8 Methods of circulation possible in cop dyeing machines

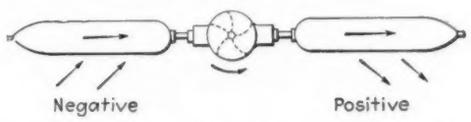


Fig. 9. Arrangement of cops in two-cylinder experimental machine

regarding the circulation of the dye liquor, an attempt has been made to examine the problem as closely as possible. With this in mind evidence was collected, but was found to be conflicting and contradictory; therefore only those facts which appear to be general truths have been accepted to form the basis of this investigation.

Except for very heavy shades, it can be said that one-way circulation in either direction is not entirely satisfactory. From the mass of opinions which have been noted regarding reversible circulation, the following factors were found to play some part in the results achieved in dyeing: (1) Initial direction of flow and its duration. (2) Duration of flow in any one direction. (3) Pressure of the liquor on the cops.

Direction of Flow

There seems to be no doubt that the first flow of liquor through the cops has an important influence on the quality of the dyeings. A dismantled machine was re-erected so that the rotary pump was placed in the pipe line between the two cop cylinders, as represented in Fig. 9. The circulation through one cylinder of cops was then equal in duration but opposite in direction to that in the other. It was found that in every case the best dyed cops came from the cylinder in which the initial flow of liquor was from the inside to the outside of the cops. Subsequent changes in the direction of the flow did not entirely remove this difference between the respective cylinders. It follows that to secure even dyeings in two-cylinder machines the circulation through the two cylinders must be identical in every respect.

To study the pressure exerted by the liquor on the cops a spindle was removed from the middle of the cylinder and replaced by a nipple connected to a length of rubber pressure tubing. This was attached to a simple form of manometer tube, from which comparative pressure readings could be obtained (Fig. 10). Readings were taken with the circulation taking place in both directions—positive when the liquor was forced through the cops from the inside to the outside, and negative when the flow was from the outside to the inside of the cops. In all cases the positive readings were slightly higher than the negative readings. The pressure developed is proportional to the resistance of the cops to the flow of liquor. In the preliminary wetting-out operation the pressure readings are instructive. Initial negative pressure was found to reach as high as 20 in. of mercury (wetting out is always begun in the negative direction) and this pressure gradually fell at over a half-hour period until the final reading was only 2 in. when it remained constant. On transferring the same cylinders to the dyebath the initial pressures were found to be: positive pressure, 10 in.; negative pressure, 8 in.

A steady fall takes place for a few minutes to levels varying with each dyeing, but fairly constant pressures are maintained throughout the major portion of the dyeings. Some simple form of manometer or pressure gage proves a useful aid to successful dyeing, and should be fitted to each machine and a careful watch kept on the readings. Abnormally high readings may indicate badly boiled-out cops, dyestuff not in proper solution, etc.; very low readings generally give warning of leakages in the circulation system. Missing or broken spindles, leaky pump packing glands, and slipping belt drives all lower the pressure readings, and are reflected in the dyeing results.

To discover the best arrangement of the duration of flow of liquor during the dyeing period, the small sample dyeing device shown in Fig. 11 is used. This consists of a T-shaped piece of gas piping, fitted with two spindles and means of attaching the whole device to the side of the dye vat underneath the surface of the liquor (Fig. 12). The open limb is connected by means of pressure tubing to a pet cock fitted in a convenient place in the pipe line. After observations on many dyeings it will be found that the following procedure gives the best results: Start with a positive direction, give 2 min. each way, follow by 5 min. each way, follow by 10 min. each way.

This procedure gives a total of 34 min. per dyeing, always finishing in the negative direction. When the dyeing operation is followed by washing or soaping, this should also take place mainly in the negative direction.

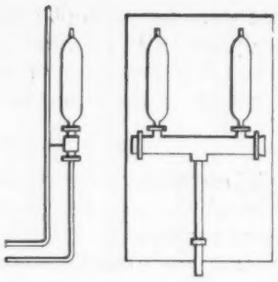


Fig. 11. Sampling dyeing device

Inspecting Dye Cops

When dyeing is completed and passed for shade, the cop cylinders are placed on tables, and the cops are removed from the spindles. The operative is instructed to make a careful and systematic search for badly bent or broken spindles before commencing to remove the cops; for with the greatest care spindles get broken when the cylinders are being raised from or lowered into the dyeing machine. Cops on these spindles are carefully examined, as the badly dyed individual cops are not detected before they are actually being used in the loom if they are allowed to pass this examination.

The arrangement of the cops on wires, frames, or trays does not call for any particular comment; and the form of oven or stove depends on individual preference.

Conditioning is an important operation, and the financial success of an undertaking is largely dependent on proper conditioning. All batches of cops are tested for moisture before they are put into work and they should leave the dyehouse in exactly the same condition as they entered it. If the moisture is excessive, the manufacturer complains; if there is a deficiency of moisture, a loss to the dyer results. Systematic testing is adopted so that there is a constant check on the condition of goods being received and dispatched. Where cops are being used in the same plant, conditioning is necessary so far as it renders the yarn more suitable for weaving.

Causes of Defects

The defects which may develop during dyeing are many, and these vary in seriousness in proportion to the class of work for which the yarn is to be used. As an example, in some fancy fabrics, 5 lb. of dyed yarn enter into the construction of 250 pieces, hence any dyeing faults may have exceptionally serious consequences.

One of the most common faults in cop dyeing is that of unevenness at the nose or butt of the cop. In some cases this defect cannot be attributed directly to the dyer, since it is caused by defective spinning. If the cops are built too high, a certain amount of dragging takes place when the cops are placed on the spindle and the tapered nose of the cop is stretched. This causes unevenness in two ways, as shown in Fig. 13. The tip of the cop is tight on the spindle where there is no perforation, and there the yarn is undyed. Where the stretching has occurred, the cop is less dense than in the other portions, offers less resistance to the flow of liquor, and as a result is more heavily dyed than the remainder of the cop. Similarly at the butt of the cop, if the paper tubes are not in their proper position, both as regards cop and spindle, unevenness results. If the cop is spun too high on the tube, the lowest perforations are not covered by the yarn and the liquor escapes; if spun too low on the tube, the extreme butt of the cop is undyed, as it is below the lowest perforation of the spindle.

At the same time, cops which have been placed on the spindle in the proper manner are sometimes found to suffer from this defect. In using a machine in which the pump is fixed in the pipe line between the two cylinders the cause of this is readily discovered. In the majority of cases where the initial direction of liquor flow is from the outside to the inside of the cops, which must happen in the case of one cylinder of this machine, the cops are unevenly dyed at the nose and butt. With this machine, one cylinder of cops has generally to be rejected, and sent for black, while the other is correctly dyed, hence it is seen that in the one case the circulation is at fault.

This conclusion is further confirmed by using a machine of the design in which the direction of the flow of the liquor is the same in both cylinders, starting the circulation from the outside to the inside of the cops, and continuing for five minutes. On examination it is found that in the majority of cases unevenness is quite evident. In many cases, no matter how the circulation is subsequently varied, the unevenness persists to the end.

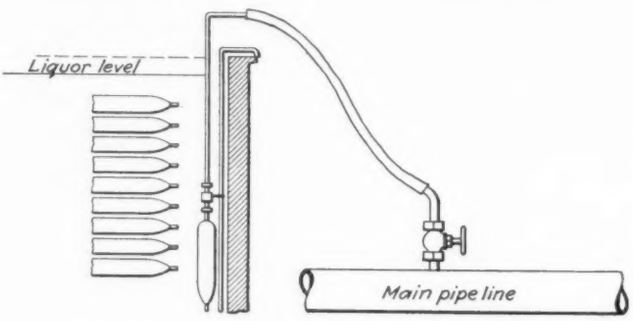


Fig. 12. Sample dyeing device in position in the dye vat

A satisfactory explanation of this practical fact has now to be sought. Consider the first passage of liquor through the cop. The concentration of the dyestuff solution is at its greatest, the affinity of the fiber for the dyestuff at its strongest; therefore it is essential that when these conditions obtain the dye liquor should move most rapidly over and through the material. Consider the flow of liquor through the cop in both directions with respect to the rate of flow. It is shown in Fig. 14 that the speed of the liquor increases when passing from the outside to the inside of the cop, and decreases when flowing in the opposite direction. Therefore to satisfy the above condition and to confirm the practical conclusion, the initial direction of the flow of liquor must be from the inside to the outside of the cop.

Other Difficulties

Closely allied with this defect is one of rarer occurrence, but of greater seriousness. It is that known as ringiness and consists of the formation of undyed rings on the surface of the cops, most frequently at the point where the butt merges into the body of the cops. Fortunately, this fault is only found when dyeing fine yarn in the palest of tints. Often the solubility of the dyestuff may be the cause, and a change of dyestuff removes the defect. There are cases, however, where this change is either impossible or inadvisable.

Considerable difficulty is experienced in arriving at the cause of this trouble, but there seems to be no doubt that the degree of solubility of the dyestuff is alone

responsible. Possible causes, such as surface drying after wetting out, faulty paper tubes, and contamination of the surface of the cops can be ruled out, owing to the regularity of the ring round the surface of the whole of one batch of cops, and to the disappearance of this defect if a fresh dyestuff is substituted and dyed to the same percentage shade.

The following explanation is suggested: Although the concentration of the dyestuff is low, the solubility is relatively slight. The affinity for dyestuff shown by the fiber at the commencement of the dyeing is very high. The ratio of the solubility to the affinity is approaching the safety limit. The interior of the cop is quickly dyed; and when the circulation is reversed, there is not sufficient dyestuff remaining in solution to dye the outside of the cop evenly and throughly. Experiments with a large number of dyestuffs show that even with dyestuffs of good solubility, 0.1% shades often show this defect, and in some cases the defect persists in 0.4% shades; 0.5% shades have been found to be free from this defect. This form of unevenness appears then to be confined to pale shades; and to overcome it, methods are adopted either to assist penetration at the outset, or to decrease the affinity of the fiber for the dyestuff so as to allow the dyeing to take place more slowly.

It is thought that probably in all cases of cop dyeing, uneven dyeing takes place at the beginning of the operation. This is corrected by the continued circulation of the liquor. In pale to medium shades it is believed that there is actual transference of dyestuff which has already been dyed on the fiber to other portions of the cop. If dyed and undyed cylinders of cops are introduced into a bath in the appropriate condition, but containing no added dyestuff, and the circulation is carried out as in a normal dyeing operation, it is found that the undyed material is well dyed and the dyed material has lost some color, although nothing approaching equalization is attained. This offers a method for the dyeing of delicate tints which are only attainable with great difficulty when dyeing in the normal method.

Avoiding Dye Specks

An extremely troublesome problem with regard to cop dyeing is that of the deposition of dyestuff on the metallic parts of the machine. When this takes place on the copper or iron sides of the machine, with care injury to the material can be avoided; but when the deposition takes place on the spindle itself, it is extremely difficult to produce clean dyeings. When the cops are removed

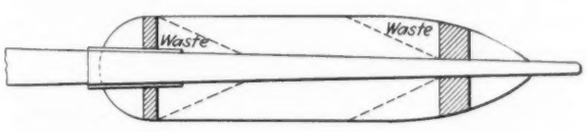


Fig. 13. The shaded parts are most heavily dyed

from the spindle the precipitated dyestuff is firmly rubbed into the center of the cop and shows in the weave in the form of darker, colored specks. In heavy shades this defect may pass unnoticed, but in pale shades the specks are prominent and persist after subsequent clearing. Rubbing the deposit from the tips of the spindles lessens the liability of this defect, but so far no method of treatment has been evolved to remove the deposit from the surface of the spindle within the cop.

Many of the observations, and much of the evidence on this vexatious problem appear to be contradictory. The degree of polish of the surface of the spindle acquired during use appears to play some part in producing the deposit. Where the liquor impinges directly on to the exposed portions of the spindles, the deposit is least, being affected probably by the mechanical scouring action of the liquor. Again, some dyestuffs appear to be immune, whereas similar and related dyestuffs give a heavy deposit. In compound shades, one component may be affected, while another is not. In other cases, dyestuffs which when used alone do not show this defect, immediately develop the trouble when used in a com-

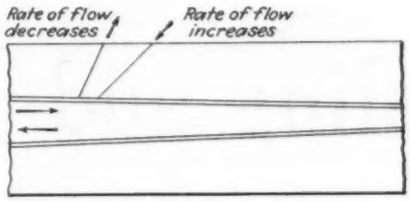


Fig. 14. Flow of liquor

pound shade; and *vice versa*, dyestuffs almost unusable alone can be employed satisfactorily in compound shades.

Deposition of Dyestuffs

On the whole, the problem appears physical and mechanical rather than purely chemical, although it must be admitted that in some cases there may be some chemical change in the nature of the deposit. When glass rods are allowed to remain in some solutions of dyestuffs, a similar deposit occurs. This fact leads one to the conclusion that the process of deposition may be one of crystallization, and that the size of the dyestuff molecule and the nature of the surface on which the deposit occurs are contributory factors. Endeavors are being made to discover the ideal conditions for the deposit to take place. The following is given as a case of the type of practical evidence available. Three separate dyeings were made to the same shade. The first, which was dyed towards the end of the day, showed a heavy deposit. The cops were removed from the spindles, the spindles cleaned with a damp cloth, and the cops replaced on the spindles the next morning. In this second dyeing no trace of a deposit was found. The deposit on the next dyeing on the same cylinders carried out under the same conditions was just as heavy as in the first case.

Localized faults are generally due to mechanical defects in the spindles themselves. Spindles become choked with cotton waste, etc., or broken, giving single faulty cops which may be only partially dyed. A thorough and systematic examination of the spindles each time they are removed from the cops should be insisted upon to lessen the possibility of single faulty cops finding their way to the loom. The open ends of the pipe lines must always be kept covered by fine-meshed wire screens. A similar defect is that known as stabbed cop. Operatives, if in haste, are apt to force the cops onto the spindles too harshly, with the result that the spindle does not follow the original path formed during spinning. The material is thicker on one side of the spindle than on the other, and uneven dyeing follows. Careful supervision of the operatives reduces this defect to a minimum.

(To be continued)

Industrial Cotton Mills Supplements Direct-Moisture Humidification with

Cooling and Ventilating System

TESTS conducted at the Industrial Cotton Mills, Rock Hill, S. C., showed that installation of an experimental cooling and ventilating system in the spinning room had been followed by marked improvement in atmospheric conditions. Since the room was already equipped with direct-moisture humidifiers, the chief problem to be solved was to obtain adequate cooling and ventilation by making use of the excess evaporative capacity of the existent humidifying system. This problem was referred to Parks-Cramer Co., Fitchburg, Mass., who undertook to install the necessary equipment.

Engineers from this latter concern found that to obtain the desired conditions it was necessary to provide the following features of control: (1) Cessation of ventilation by actuation of a limiting thermostat whenever temperature remained below the actuating setting; and, conversely, automatic release of ventilation for operation under the control of the humidity regulator whenever room temperature exceeded the actuating setting of the limiting thermostat. (2) A humidity regulator which would establish and operate on both an upper level of relative humidity at which operation of the humidifiers was controlled, and a lower level of relative humidity at which operation of the ventilating fans was controlled.

Installs Experimental System

The experimental system which was installed consisted of ventilating fans, exhaust louvers, and the necessary controls. Inlet fans and exhaust louvers were mounted in the upper sash along each side of the room. On the outside of the sash a hood extends a short distance from each fan inlet to prevent rain from coming in during bad weather.

The two-step psychrometric regulator was selected as offering the best means of control. This device consists of a double slide valve actuated by the relative motion of two expansible metal diaphragms. Since one of these diaphragms is affected by variations in dry-bulb temperature, and the other by variations in wet-bulb temperature, their relative motion indicates changes in wet-bulb depressions—the measure of relative humidity.

The existing humidifying system at the Industrial Cotton Mills was equipped with single-step psychromatic regulators which were converted to two-step operation by slight alterations.

Conditions Encountered

Since this mill experiences cold weather in the winter, hot weather in the summer, and frequent alternations between the two conditions during the spring and fall, it was necessary for the regulating system to cope with several atmospheric conditions. In the manner described below, each of these conditions were met.

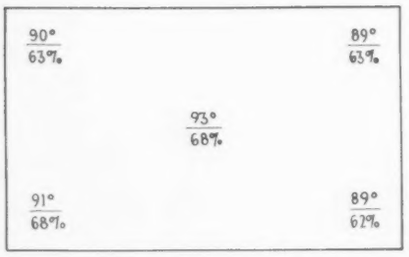


Fig. 1.—Conditions obtained in attempting to control ventilation by adjusting transoms.

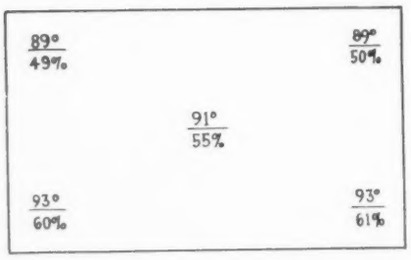


Fig. 2.—Another attempt to control ventilation by manual adjustment of transoms resulted in these conditions.

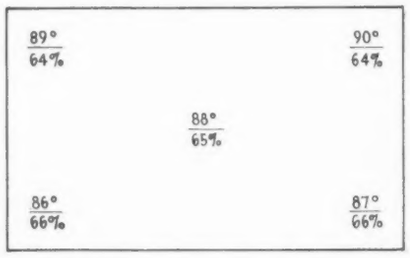


Fig. 3.—Automatic control of ventilation gave uniform conditions throughout the room as contrasted with uneven conditions under manual control.

Spinning room of Industrial Cotton Mills, showing humidifier, ventilating louver, and psychometric regulator

During cold weather, moderate and low temperatures caused the limiting thermostat to "veto" ventilation, and the humidifying system was turned on and off as in ordinary practice by the humidity regulator actuating at its upper limit of relative humidity. Here was an ordinary humidifying system dominated by automatic regulation, and the ventilating system was inactive.

When the weather became sufficiently hot to increase room temperature above the setting of the limiting thermostat, the ventilating system went into operation and took charge of the relative humidity. The humidity was maintained at the lower limit of the regulator, keeping the humidifying system operating continuously at full capacity, with humidity control by ventilation only.

When the room temperature hovered above and below the setting of the limiting thermostat (mainly during the moderately warm weather encountered in the spring and fall), automatic alternation of control of humidity by humidifiers and by ventilating fans was provided.

Results Obtained

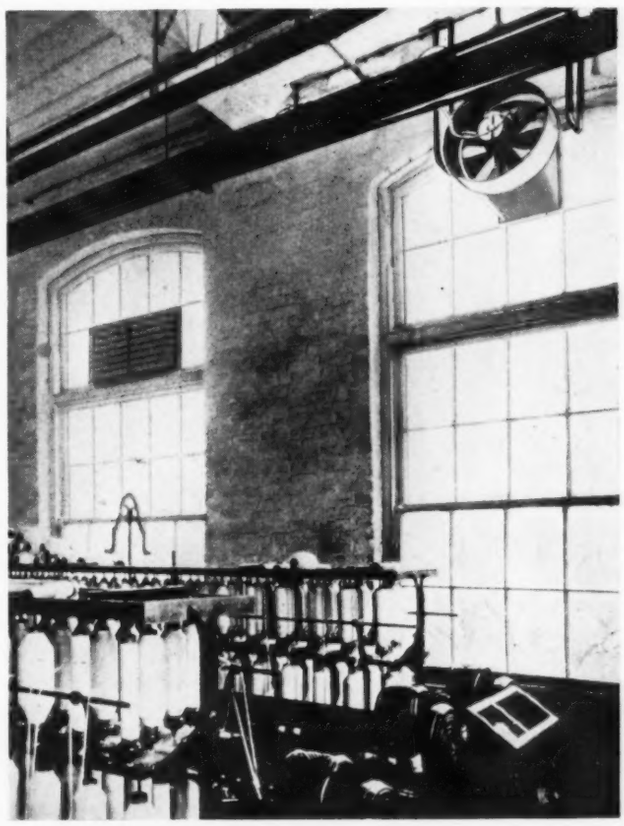
The results obtained from these experiments disclosed that, not only was the desired relative humidity maintained at all times, but working conditions for the employees were much improved, and atmospheric conditions throughout the room were decidedly more uniform. Because of the success of this installation, applications for patents to protect the new system were filed in the U. S. Patent Office by Parks-Cramer Co.

The accompanying diagrams selected from some of the data collected by the manufacturers in their experiments at the Industrial Cotton Mills show the results which were obtained from automatically balancing air change and evaporation. In the diagrams, the upper figures indicate dry-bulb temperatures, and the lower figures indicate relative humidities. The locations of the figures in the diagrams indicate roughly the locations of the observation points in the room.

On a certain day before the system was installed, when the outdoor temperature was 98° F. and the relative humidity was 27%, observations were made in this room to determine how well conditions could be controlled by adjusting the transoms. First the transoms were adjusted to allow about 30% less ventilation than would balance the evaporative capacity. This allowed the humidifiers to be running about 85% of the time, and was as close an adjustment as could be made without sacrificing the humidity level. The diagram given in Fig. 1 shows the results obtained. Notice how uneven conditions are throughout the room.

Then the transoms were opened wider to allow about 30% more ventilation than was required to balance the evaporative capacity. Now the humidifiers were running continuously, but were still unable to maintain the desired 65% humidity. The room was, on an average, 1° cooler, but the humidity was 10% lower. It will be noticed from Fig. 2 that in this case there is even a greater variation in conditions throughout the room.

The diagram shown in Fig. 3 gives data collected after the installation of ventilation control on a day when outdoor temperature and humidity were the same as they had been when the previous tests were made; namely, 98° F. and 27% relative humidity. There was a lowering of temperature of 2 or 3° over either previous condition, and at no point in the room was the relative humidity more than 1% from the desired 65%. None of this data represents a momentary condition, but average readings taken over a reasonable test period.



Air is supplied to the spinning room by means of fans which are automatically started and stopped by a humidity regulator

Overseers' Round-Table

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

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The Super's Instructions

Editor, Overseers' Round-Table:

I HAVE followed and enjoyed your Round-Table discussions with great interest.

I firmly believe that the best liked and most successful super is the man who tells his overseers clearly and distinctly what he wants, and then leaves them alone to produce the desired results in their own way.

Results are what count and an overseer is hired to run and be responsible for a department. When the super undertakes to tell an overseer how to set his machinery and handle his help the responsibility for the department ceases to rest with the overseer and is an extra burden for the super to carry.

No super can hope to know each department as well as the overseer who has probably spent the greater part of his life in his department, and no two men do a job exactly the same way. Therefore, let the overseer alone to work out his problems. Let the super give the orders, see that they are filled, and that the product is properly delivered from each department.

L. R. ALEXANDER,
American Woolen Co.

Editor, Overseers' Round-Table:

YOUR QUESTION as to overseers and superintendents.

In my opinion the super should tell the overseer what he wants and then let the overseer use his own judgement as to the best and cheapest way to do it. If the super has to be forever showing and telling an overseer how to do everything what is the use of having an overseer there? E. S.

On "Scouting" Other Mills

Editor, Overseers' Round-Table:

I HEARTILY agree with Pete that sending out scouts to other mills is the bunk. Any overseer who cannot develop new ideas of his own without spying on his fellow overseers ought to quit. There isn't any overseer who knows his stuff who wouldn't be glad to give information to another.

In one mill I know, the overseer in the dyehouse goes around with a ½-pt. bottle. He has this bottle filled with water and pours a few drops in the stripping bath before he runs it off. The help, as well as some of the "higher-ups," think this man is a genius, with his guarded secret. Secrets do not make good overseers; it is the practical experience which counts.

FRANCIS J. MCNEICE,
Overseer of Dyeing.

Editor, Overseers' Round-Table:

THE PRACTICE of sending out "scouts" to work in a competitive mill should be frowned upon by all executives. Present conditions call for cooperation on the part of all mill men.

Keeping secrets of special processes is a thing of the past. What is good for one mill is good for another and the whole industry benefits. If a man has brains enough to put over something worth-while he should be man enough to let the

The Overseers Discuss

"FROM time to time," Superintendent Chase spoke, "various organizations come to me and ask permission to go through the mill collecting contributions to certain causes. I think that, with present conditions as hard as they are and many relief agencies seeking help, it would be pertinent for us to discuss the subject and find out what the majority opinion is. Do you men think that I should allow different charitable organizations to go through the plant and get contributions?"

"I certainly do," Bill spoke up. "There are many worthy causes which are well worth the support of all of us and I think we should do everything possible to help them. If someone from a charitable organization is allowed to go through the plant and get contributions it is much easier and less expensive than having to go around and see each worker at home. With a large group gathered together in a mill it is the easiest way to handle the problem of getting contributions and I do not think that any of us will deny that our donations are needed and do a great deal of good, particularly in these hard times when many are suffering. There may be a little time wasted, but I think that the company should be willing to overlook such things in the interest of a good cause. I see no reason why permission should not be given to collect contributions in the mill for worthy organizations."

"Why not let them collect at the mill gates?" Joe suggested.

"Because everyone is hurrying and pushing when coming in or going out," Bill replied, "and it is so troublesome to stop and fish around for some change that most, unfortunately, just rush by."

"Don't get me wrong," Pete joined in, "but I do not believe that anyone should be allowed to go through the plant getting contributions. There is no doubt that most of the causes are well worth our support, but once you start letting people collect donations in the plant it is difficult to say where

Contributions

to stop. It may be quite all right to let in the Red Cross, and the like, but the next week someone may ask the super's permission to get contributions towards erecting a statue to Joe Whosis, or something of the sort, and if the super refuses there is always hard feeling because others were let in. You can't really draw any line and it is safest and better justice to exclude all. Another point which I think is important is that I believe contributions to charity are a private affair. A man may not be able to afford much of anything, but if the collection takes place in the mill mass opinion forces him to give what the others give. I think it is much better to let each one be guided by his own conscience and give in private outside the mill. I am not in favor of allowing contributions to be collected in the mill because it isn't fair to some of the workers and the privilege is often abused and soon there are donations requested for all sorts of things."

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Do *you* believe that permission should be given to collect contributions in the mill for various causes?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

other fellow benefit. One good turn deserves another and he will never regret such action.

If a competing mill is putting over something new in cloth, the overseer concerned should have brains enough to duplicate. Cooperation is the need of today—not throat-cutting.

CARDER.

Ownership of Formulas

Editor, Overseers' Round-Table:

I HAVE read with interest your article on formulas and desire to express my views as follows:

I do not think that any foreman should keep any formulas, or matters of importance regarding his work, from the company which employs him. He is engaged at a salary to do his part for the company and he should give *clearly* all information and particulars for several reasons. He may be out sick, or meet with an accident, and he should leave everything so that the company and his fellow workers will not be crippled. Again, he is paid for what he does on the company time and should give all particulars. He need not be afraid of his position, as I can assure you that a good manager or super, always respects a good foreman and will never stoop to the point of employing anyone for the sake of their formulas, records, etc.

Remember, 95% of employers, managers and superintendents are perhaps more loyal to their foremen than we are to them, and the sooner that we are open-minded and help in every possible way, and realize that a foreman cannot run the whole concern by these small and trivial matters, the more comfort and success we shall have for ourselves, our employers, and our fellow workers. F.W.C.

Editor, Overseers' Round-Table:

I HEARTILY agree with Pete on the stand he has taken in regard to company-overseer relations on formulas, etc. An overseer who is loyal to his company will not have to be asked for formulas, etc.

I think an overseer should teach his second hands as much about the job as he himself knows, as he doesn't know when the supt. is coming around and ask him to take a job higher up, if he has anyone who can run his old job. Another thing, if an overseer is getting results and doing the fair and square thing, he need never fear being let out for a cheaper man.

In conclusion, anyone may know the formulas and then never run a job, as there is much more to running an overseers' job than just knowing the formulas. B.S.G.

Editor, Overseers' Round-Table:

MOST ASSUREDLY the overseer, superintendent, and even manager, should turn over to the company all formulas, rules, records and information pertaining to his work at the mill upon terminating his term of office.

Taking the boss dyer as an example, why should he not turn over all his formulas? Did he not work these out and experiment on company time? True enough, he may have put in some extra hours at home in his home laboratory, but was he hired for so many hours a day or did he come to the mill as an overseer?

A real overseer is part of the organization; an assistant to the superintendent. A real overseer works 24 hours a day; loves his help, his mill and his superiors.

Yes, all formulas and records belong to the mill and if an overseer, superintendent, or even manager, takes them when he leaves, he is acting against his better judgment. Rx.

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Summary of Discussion on Sending Out "Scouts"

Not one of the contributions came out in favor of sending men out to work in a competing mill so that various types of information could be picked up. All stated that no overseer was worth his pay if he had to depend on spying to learn how to do things, and that cooperation and good will were far more valuable. The point was also made that the amount of information a scout could pick up was greatly overestimated.

NEWS about MEN

✦ DEXTER STEVENS, president of Manville-Jenckes Co., Pawtucket, R. I., has been elected treasurer of the company, succeeding ERNEST L. LITTLE, and in the future Mr. Stevens will discharge the duties of both offices. RICHARD STEADMAN has been elected as vice-treasurer.

✦ JOSEPH T. KENNEY was elected president of the board of directors of the Sharp Mfg. Co., New Bedford, Mass., at the annual meeting of the corporation held Feb. 3. Other directors elected were EDMUND H. LELAND and ELMER A. MACGOWAN, LENA M. RIGBY being elected treasurer and clerk.

✦ HOMER HANCOCK, of Lebanon, Tenn., former State Commissioner of Agriculture for Tennessee, was re-elected president and J. P. RIDLEY, Columbia, Tenn., was elected secretary and treasurer of the Tennessee Wool Growers Association, at the recent annual meeting of the organization at Nashville.

✦ CARRTER LUPTON, president and J. B. FRIERSON, JR., treasurer of the Dixie Mercerizing Co., of Chattanooga, Tenn., are among the incorporators of a newly organized real estate mortgage company.

✦ ROBERT G. EMERSON, Boston, Mass., has been elected to the board of directors of the Charlton Mills, Fall River, Mass., to fill the vacancy caused by the death of EARLE P. CHARLTON. Mr. Emerson is connected with the First National Bank of Boston.

✦ ABRAM SALTER, president of Salter Mills, Saugus, Mass., has been elected a director of the Chelsea (Mass.) Trust Co.

✦ ELMER A. MACGOWAN was elected president of the Fairhaven Mills Real Estate Co., New Bedford, Mass., at the annual meeting held Feb. 4. EDMUND H. LELAND was elected vice-president, JOHN M. BULLARD, clerk, and A. C. HIMES, treasurer.

✦ GEORGE J. SWIFT, at the annual meeting of the Springfield (Tenn.) Woolen Mills held Feb. 4, was elected president; JOHN F. JERVIS, first vice-president; J. J. PEARCE, second vice-president, and HERBERT E. PRITCHARD, secretary-treasurer.

✦ W. B. PUETT, on Jan. 27, was made president of Eagle Yarn Mills, Inc., Belmont, N. C.; S. P. STOWE, vice-president; J. W. STOWE, secretary and treasurer. JOHN M. SCOTT, Charlotte, N. C., R. L. STOWE, F. F. HALL and A. C. LINEBERGER, of Belmont were elected additional directors.

✦ MORGAN BUTLER, JOHN F. GLENNON and JAMES F. BACON were added to the list of directors at the annual meeting of the Quissett Mill, New Bedford, Mass., held Feb. 3. Other directors re-elected were: WILLIAM M. BUTLER, president; ABBOTT P. SMITH, THOMAS F. GLENNON and EDWARD H. COOK. THOMAS F. GLENNON was elected agent, EDWARD H. COOK treasurer and JAMES F. BACON clerk.

✦ RALPH E. ROLLINS, formerly president of Rollins Hosiery Mills, Des Moines, Iowa, was elected as chairman of the board. J. H. BRINE, formerly vice-president, was elected president; WILLIAM MEWSE, formerly secretary and treasurer, elected vice-president and treasurer, and W. A. NUZUM chosen as secretary at a meeting of the board of directors.

✦ ERNEST ELLSWOOD WETHERBEE, president of the Flint River Cotton Mills, Albany, Ga., and MRS. CLAIRE WOOTEN MILLS, of Dawson, Ga., were married Jan. 31. Following the ceremony, the couple left for a month's stay in Bermuda.

✦ D. E. SELLERS, president and treasurer of the Sellers Hosiery Mills, Burlington, N. C., has been elected a director of the Burlington chamber of commerce.

✦ SPENCER A. REED, former president of the Athol (Mass.) Mfg. Co., has been elected clerk and treasurer of the Athol Industrial Corp.

✦ GEORGE S. BARTON, president and treasurer of Rice, Barton & Fales, Inc., Worcester, Mass., and MRS. BARTON, sailed from

Obituary

Frank P. Bennett

Frank P. Bennett, president of Frank P. Bennett & Co., Inc., publishers of *American Wool and Cotton Reporter* and *United States Investor*, died last Monday in his 77th year. He was born in Cambridge, Mass., and after graduating from the Chelsea High School went into the publishing business and became a well known financial writer for the New York *Tribune*. He was also for a time managing editor of the Boston *Advertiser* and of the Boston *Commercial Bulletin*.

In 1887 he founded the *American Wool and Cotton Reporter* which he continued to head until his death, although he relinquished the active management to his sons some years ago and had practically retired from business. During his long editorship of the *Reporter* he was widely known as a vigorous writer and speaker.

He served as representative in the Massachusetts Legislature for several years where his forceful character made him a prominent member. He was chairman of the Rapid Transit Commission which formulated the present system of street transportation in metropolitan Boston. At one time he was interested in wool raising and sheep growing. He had a farm in Freedom, Me., where he had at one time the largest flock of sheep ever held under one ownership in New England.

Mr. Bennett was a member of many fraternal organizations and of the First Baptist Church in Boston, and for several years was president of the Massachusetts Universalist Convention and moderator of the Universalist General Convention.

He is survived by three sons, four grandsons, a graddaughter and two great-grandsons.

Chester M. Curry

Chester M. Curry, former partner in the old cotton goods firm of Brander & Curry, died early this week in New York after four months illness. He started in business with Curry & Horsford, his father's firm. After about 20 years with the firm, he founded Brander & Curry in 1914, in which he was a partner until 1923, when the firm passed out of existence. Since then he had been retired. Brander & Curry specialized in tire fabrics and automobile body fabrics. Mr. Curry was a member of a number of clubs. He was at one time part owner of the New York National League baseball team. He is survived by his widow, the former Lida Ryan; a step-son, James F. Ryan, and a brother, Harry Curry, who is well-known in the woolen trade.

Henry C. Ball

Henry C. Ball, founder of H. C. Ball & Co., Philadelphia, died suddenly Feb. 1, at his home in that city. He had not been active in business for several years; the plant of the firm of which he was the head had been idle for a number of years and recently had been offered for sale. Mr. Ball was prominently identified with the sales worsted yarn business for many years and enjoyed a wide friendship among spinners.

Edward Curry

Edward Curry, 61 years old, master mechanic at the Island Woolen Mill, Baraboo, Wis., died at his home Jan. 17 of a heart ailment. Mr. Curry had been connected with the woolen mill for 33 years.

George W. Mossman

George W. Mossman, a retired pensioner of the Graton & Knight Co., Worcester, Mass., having been employed for many years in both the office and shop of that company, died suddenly in that city on Jan. 11. He was 70 years old and a native of Worcester.

Patrick W. O'Reilly

Patrick W. O'Reilly, retired overseer of spinning for the Ware (Mass.) Woolen Co., died suddenly from heart trouble Jan. 20. He was 84 years old.

New York on Feb. 6 on the S. S. "Aquitania" for Europe to be absent several months.

✦ WILLIAM W. OLLENDORFF, president and treasurer of the Bellingham Woolen Co., No. Bellingham, Mass., is a member of the committee appointed to revise the rules and regulations of the Massachusetts republican state committee.

✦ W. B. SHEPARDSON has resigned as president and general manager of the Phoenix Mills, Inc., Statesville, N. C., and is again making his home at Little Falls, N. Y.

✦ L. D. RIVERS was elected president of West Knitting Corp., Wadesboro, N. C., T. C. COXE, vice-president and T. J. COVINGTON, secretary and treasurer at the annual meeting of stockholders. These with H. B. ALLEN, FRANK BENNETT, H. W. INGRAM, W. H. LILES, L. D. ROBINSON, J. W. SULLIVAN, and F. M. HIGHTOWER form the board of directors.

✦ C. R. NORTH, president of the Novelty Knitting Co., Cohoes, N. Y., has been elected a director of the Manufacturers Bank, in that city, succeeding the late J. A. PERKINS.

✦ REINHARD HUETTIG, former president of the Paterson Mutual Hosiery Mills and later of the Vogue Silk Hosiery Co., has been elected president of Ladies' Hosiery, Inc., Paterson, N. J., succeeding WILLIAM THIEMANN, who was elected vice-president. FRED HUETTIG, former secretary-treasurer of the Paterson Mutual, has been elected to the same capacity in Ladies' Hosiery.

✦ CLARE H. DRAPER has resigned as vice-president of the Draper Corp., Hopedale, Mass., effective on March 1. He is relinquishing active work but will continue to be associated with the corporation, where he had been in charge of patent and experimental work. His son, CLARE H. DRAPER, JR., is in charge of the sales department of the corporation at its Spartanburg, S. C., warehouse.

✦ ODUS M. MULL, for two years pardon commissioner of North Carolina, has resigned and returned to Shelby, N. C., where he becomes financial manager of Cleveland Cloth Mills, of which Gov. O. MAX GARDNER is president. Mr. Mull succeeds E. T. SWITZER, who has gone to New York, and is for the present with the New York office of the company which sells the output of the Cleveland mill.

✦ ARTHUR D. WINDLE, treasurer of the A. D. Windle Co., Millbury, Mass., has been elected chairman of the finance committee of that town.

✦ FRANK E. VAN TINE, treasurer of the Republic Cotton Mills, Great Falls, S. C., has been elected a director of the Chester (S. C.) chamber of commerce.

✦ CAPT. H. P. MEIKELHAM, southern agent of the Pepperell Mfg. Co., Rome, Ga., was recently elected president of the Textile Baseball League, composed from the following textile towns and villages of that section: Lindale, near Rome; Anchor-Duck, at Rome; Atco, Aragon, Cedartown and Rockmart.

✦ J. L. BRAMAN, treasurer of the Albany (N. Y.) Knitting Co., has been elected vice-president of the chamber of commerce in that city.

✦ ARTHUR S. JONES, who has been assistant treasurer for some time of the Southern Chemical Cotton Co., Chattanooga, Tenn., has been promoted to treasurer, which position was formerly held by W. D. MUNSON, vice-president and general manager. FRANK L. UNDERWOOD was elected also a member of the board of directors. MERCER REYNOLDS was changed from vice-president to the chairman of the board of directors.

✦ C. A. ASHLEY has severed his connections with the Union Mills, St. Johnsville, N. Y., in order to take the position as general manager of the Gardiner & Warring Knitting Co., Florence, Ala.

✦ H. G. REYNOLDS, who recently resigned as superintendent of the Volunteer Knitting Mills, Athens, Ala., has been succeeded by J. L. BARNWELL, who was promoted from overseer of carding to the superintendency of the plant.

✦ J. C. HARRIS, JR., who has been associated with Union Bleachery, Greenville, S. C., for several years, more recently in the New York office, returns to the plant on Feb. 15 to take the position of superintendent.

✦ G. R. HOOPER, formerly superintendent of the Clover (S. C.) Mills Co., but recently superintendent of the Monroe Mills Co. and the Union Mills Co., Monroe, N. C., has become superintendent of the Bladenboro (N. C.) Cotton Mills, Inc.

✦ S. R. POWER, who has held the superintendency of the Langley (S. C.) Mills, has relinquished his duties in this capacity.

✦ W. L. SPRYE, superintendent of operations of the Hillcrest Silk Mills, High Point, N. C., will also have supervision over the Klotz Silk Mill, Reidsville, N. C., which plant has been taken over by the former company.

✦ HAMILTON W. THAYER, superintendent of warehouses; THOMAS H. WEST, 3d., of the sales department, and RICHARD HEYWOOD, purchasing agent, all officials of the Draper Corp., Hopedale, Mass., have been added to the board of directors of the corporation.

J. J. Scott, president of the Scottdale (Ga.) Cotton Mills, has been elected president of the Decatur (Ga.) chamber of commerce.

✦ JOSEPH ALLARD who for some time past had been superintendent of the Bailey Knitting Mills, Fort Plain, N. Y., until the plant closed last September, has gone to Knoxville, Tenn., where he will be connected with one of the knitting plants.

✦ THOMAS DUFFY, overseer of finishing for the Waterman Worsted Co., Inc., Putnam, Conn., has been transferred to the new plant of the company at Goff's Falls, N. H.

✦ AVERY B. CLARK, for more than half a century associated with the Merrimack Mfg. Co., Lowell, Mass., has retired from the superintendency of the company's cotton department. His successor has not been chosen.

✦ H. W. ORMAND, superintendent, Union Bleachery, Greenville, S. C., has resigned effective Feb. 15. Mr. Ormand has been associated with Union Bleachery for twelve years, serving in various capacities. His future plans have not been announced.

✦ Gov. I. C. BLACKWOOD of South Carolina has appointed LYMAN HAMRICK, general superintendent of the Hamrick group of cotton mills in Cherokee County, a lieutenant-colonel on his staff.

✦ S. R. POWER, superintendent of the Langley (S. C.) Mills has resigned.

✦ A. STANLEY LLEWELLYN, manager, Wateree Mills of The Kendall Co., Camden, S. C., and JOHN A. LAW, president and treasurer, Chesnee (S. C.) Mills and Saxon Mills, Spartanburg, S. C., were elected to the board of directors of the South Carolina Council, which was recently organized in Columbia, S. C. DAVID R. COKER, cotton expert, Hartsville, S. C., was elected president of the organization.

✦ A. H. ROBBINS, general manager of the Eureka Cotton Mill, at Chester, S. C., is also in charge of the Springstein Mills, which were recently merged with the Eureka Mills, and is now known as Eureka Mill No. 2, D. C. SMITH, superintendent of the Springstein Mills, having resigned, when the merger became effective.

✦ RAYMOND B. KELSEY, former paymaster for the Fabyan Woolen Co., Stafford Springs, Conn., has been appointed treasurer of Tolland County, Conn.

✦ JIM BAKER is now associated with Stevenson Machinery Co., dealers in second-hand textile machinery. He was formerly with Robert & Co., Atlanta textile engineers; also was with Columbus (Ga.) Mfg. Co. as efficiency expert.

✦ ALONZO MALACHI BOSS, retired master mechanic in Uxbridge (Mass.) Worsted Co., celebrated his 88th birthday anniversary at his home in that town on Jan. 30. He is the older of the two remaining Civil War veterans in that town.

✦ LEPRELET LOGEE, believed to be the oldest textile worker in the country, will celebrate his 105th birthday anniversary at the Masonic Home, Charlton, Mass., on Feb. 5. He was an overseer in several southern cotton mills and also worked for a time for the Whitin Machine Works, Whitinsville, Mass.

✦ T. S. HARWOOD, formerly master mechanic at the Bailey Knitting Mills, Fort Plain, N. Y., has taken a similar position with the Skenandoa Rayon Co., Utica, N. Y.

NEWS about MILLS

Cotton

Lullwater Mfg. Co., Thomson, Ga., has been purchased by G. L. Upchurch & Sons, manufacturers of textile machinery, Athens, Ga. The plant consists of 8,000 spindles and 32, 36 and 42 in. model E and modified D Draper looms. The mill will be offered first as a going concern and if not sold promptly, it will be liquidated.

Chicopee Mfg. Corp., Chicopee Falls, Mass., closed its plant Feb. 4 for an indefinite period on account of shortage of waterpower due to its canal being frozen. About 600 operatives are affected. Reopening of the mill by Feb. 23 is indicated as probable. The corporation has applied to the city to have the assessed valuation of its properties reduced.

***Lancaster Mills**, Clinton, Mass., will hold their annual stockholders' meeting in Boston on Feb. 20, when any offers for the property, which is in liquidation, will be considered. Clinton officials of the mills state they have no knowledge of any reported offers for the property.

Berkshire Fine Spinning Associates, Inc., is establishing general offices for southeastern Massachusetts, in Fall River, Mass., at the plant of the **King Philip Mills**. Henry S. Newcombe, cotton buyer; John McMahon, general superintendent, and Fred McGowan, purchasing agent, will be located there.

Sapphire Cotton Mills, Brevard, N. C., will be taken over by a new company recently organized and headed by B. E. Geer, Greenville, S. C. The plant, which has 6,100 ring spindles and 2,200 twister spindles for the manufacture of fine combed yarn, has been closed for some time. When operating, the plant has a normal payroll of about $1,400 per week.

Alpha Spinning Mills, Inc., Durham, N. C., has been chartered with an authorized capital stock of $50,000, and subscribed stock of $300, by W. G. Bramham, William B. Guthrie, of Durham, and T. L. Bland, of Raleigh, N. C.

Dilling Cotton Mills, King's Mountain, N. C., are installing a new Johnson warp sizing machine and Sipp-Eastwood horizontal Swiss warper, purchased through Carolina Specialty Co., Charlotte, N. C.

Commander Mills, Inc., Sands Springs, Okla., reported to be preparing to complete and modernize bleachery project involving expenditure of $72,000. J. E. Sirrine & Co., Greenville, S. C., have been retained as engineers.

Union Twine Co., Canonchet, R. I., has been chartered with a capital of $100,000, to take over and operate company of same name with local mill. The incorporators are Edwin B. Stillman and Walter E. Palmer, Canonchet.

Pacific Mills, Lawrence, Mass., are running on a capacity schedule both in the cotton and worsted divisions, with day and night shifts in several departments. The plant will continue on this basis for an indefinite period.

**Indicates previous mention of project.*

Bonham (Texas) Cotton Mills, have been organized to take over the local mill of the **Consolidated Textile Corp.**, recently purchased. The new owner will resume production at once, following a shutdown since last fall, giving employment to a working force of about 200 persons. John C. Saunders has been elected president and manager of the new company; he was formerly division manager at the mill for the Consolidated Textile Corp. Francis Steger and M. C. Spivy are vice-presidents; Bland Smith, secretary; and A. B. Scarborough, treasurer. The company is capitalized at $200,000.

Canadian Webbing Co., Ltd., Kingston (Ont., Can.), a subsidiary of **Everlastik Co., Inc.**, Chelsea, Mass., is being incorporated to establish a plant in Kingston. The old **Collie's Ltd.**, woolen mill has been purchased and is now being renovated. Production is expected to commence some time in March.

Wool

Barrymore Seamless Wiltons, Inc., have construction well under way for an addition to the Verran plant on the Post Road, Stamford, Conn. New machinery and equipment is to be installed, and it is expected the plant will be put in operation early in the fall.

Sheuerman Bros., Inc., Des Moines, Iowa, have shut down until sufficient new business is in store. This mill has 9 sets, 44 broad looms and makes woolen goods converting them into mackinaws, overcoats, etc. They make the garments up at their mill.

Washington Mills of the **American Woolen Co.**, Lawrence, Mass., are increasing production and a number of workers have been added in the finishing division. A night schedule is operative in several departments. Present production will be maintained indefinitely.

Hillside Woolen Mills Co., Worcester, Mass. At the first meeting of the creditors of Hyman S. Levy, proprietor of these mills, held before the referee in bankruptcy in Worcester on Feb. 5, Jacob Sack, a Worcester lawyer was elected trustee under a nominal bond.

Brown Mills, of the **American Woolen Co.**, at Dover-Foxcroft, Me., under the management of Agent L. C. Sawyer, are manufacturing three out of ten fabrics the American Woolen Co. is now featuring.

Velvette Mills Corp., Clifton, N. J., recently organized with a capital of $400,000, to operate a local carpet and rug mill, will be represented by the United States Corp., Philadelphia, Pa. The incorporators are T. Lea Perot, Jr., Philadelphia, and Robert B. Carll, Media, Pa.

Buttonwood Worsted Mill, Germantown, Pa. This company has filed schedules in bankruptcy showing liabilities of $393,473, and assets of $388,281. Thomas H. Ball and Melville Boyd were recently appointed temporary receivers in bond of $50,000.

Pennsylvania Carpet Corp., Philadelphia, Pa., has taken title to the eight-story mill now occupied at Tenth & Diamond Sts., the property being conveyed by the Fretz Realty Co., Philadelphia, for a stated consideration of $58,136.00, subject to a mortgage of $644,000.

Knit

***Perkins Hosiery Mills**, Columbus, Ga., are operating their spinning room, cloth knitting department and paper box plant. Earlier information published in these columns to the effect that all departments except the silk knitting room had been closed down was in error, according to the firm's own statement. We are glad to be able to offer this first-hand information in correction of the earlier report.

Wayne Knitting Mills, Fort Wayne, Ind., have cut employees' wages 30% below normal scale. The force, which is now just about three-fourths of the regular number of workers employed, is working fairly steadily.

Hingham Knitting Co., Lowell, Mass., has been sold to the **Middlesex Hosiery Mills, Inc.**, a Massachusetts corporation. The Middlesex Hosiery Mills, Inc., have assumed all of the liabilities of the Hingham Knitting Co., according to statement made by H. E. Page, president of Middlesex Hosiery Mills, Inc.

Helig Hosiery Corp., High Point, N. C., has been chartered to manufacture hosiery, underwear, shirts and other goods from wool, cotton, flax, silk and other materials. Authorized capital stock is $100,000; subscribed $300 by L. B. Helig, L. R. Helig, and H. S. Haworth, of High Point.

***Sevier (N. C.) Knitting Mills, Inc.**, under the management of J. A. Ruth, of High Point, N. C., have resumed operation. Mr. Ruth has leased the plant for one year with the option of renewing the lease at the expiration of that period. The mill was recently purchased by Dr. G. S. Kirby, W. W. Neal and M. L. Good, all of Marion.

Marion (N. C.) Knitting Mills, Inc., has started excavation work for an addition to its plant, and will re-arrange its equipment to provide for increased production. The new addition will be of brick construction, two stories in height, 41x40 ft., and will front on West Court St. W. W. Neal, Sr., is president and treasurer of the company which has a production of 1,000 doz. pairs of half-hose daily.

Byrum Hosiery Mills, High Point, N. C., one of the new establishments of that city, now has 50 300-needle knitting machines producing women's pure thread silk hosiery. The plant also has dyeing and finishing equipment. E. A. Byrum is secretary-treasurer and superintendent.

Union Knitting Mills, Inc., Irvington, N. J., are planning rebuilding of portion of mill on Prospect Ave., destroyed by fire, Jan. 28. An official estimate of loss has not been announced.

Ladies' Hosiery, Inc., Paterson, N. J., is planning an expansion program at its mill on Marshall St., and proposes the early installation of additional equipment for that purpose.

Ackshand Knitting Co., Ballston Spa, N. Y., has been incorporated with a capital of $65,000 and the principal stockholders are M. H. Welton, F. C. Dorsey and S. B. Eddy.

Phoenix Mills, Inc., Little Falls, N. Y., through W. S. Becker, have sold two of their idle mill buildings to Samuel J. Blaugrund, of Utica, N. Y.

La Vic Mfg. Co., Stittville, N. Y., recently formed, has begun partial operation in the old Atwood & Buell Knitting Mill, where the new company will manufacture hosiery and underwear. The company has a capital stock of $70,000 with 2,000 shares of preferred stock and 1,000 shares of common stock. The directors are John L. Hoeschele, Daniel E. Liddy and Bradley Fuller, Utica, N. Y.

Union Mills, Inc., St. Johnsville, N. Y., are being liquidated and steps are under way to provide payment of $10 a share to holders of common and preferred stock with accrued dividends.

Elk Knitting Co., 54 West 21st St., New York. The Irving Trust Co., New York, has been appointed receiver for this company.

Brassmith Knitting Mills, Brooklyn, N. Y., have been organized by Max Breslow, formerly connected with the Pearl Knitting Works, Brooklyn, N. Y., and I. Smith. The new firm will manufacture a complete line of children's sweaters and novelties at 345 Hughes St.

Menahan Knitting Mills, Brooklyn, N. Y., makers of knitted outerwear for infants and juveniles, have moved from 1310 Myrtle Ave. to larger quarters at 142 Stockholm St., where additional machinery has been installed.

Danita Full-Fashioned Hosiery Mill, Cheltenham, Pa., has arranged for a reduction in wage scale for employees, said to average between 10 and 15%.

Bryan Hosiery Mills, Inc., Chattanooga, Tenn., recently purchased four additional 42-gauge, 24-section, full-fashioned hosiery knitting machines from the Textile Machine Works, Reading, Pa. It is planned to have these machines in operation by March 1, according to H. T. Bryan, Jr., vice-president of the mill.

Eagle Knitting Mills, Milwaukee, Wis., manufacturers of knitted headwear and juvenile sweaters, have opened their own sales offices in New York, at 93 Worth St., with Martin Shapiro, formerly with Bergman Knitting Mills, of Philadelphia, Pa., in charge. In making known this change, David Karger, of the Eagle Knitting Mills, states that manufacturing facilities of the company have been greatly increased as a result of the plant containing 70,000 sq.ft., erected three years ago, as well as by the recent purchase of the **Stern Knitting Mills,** Peoria, Ill.

Silk

***Corticelli Silk Co.,** New London, Conn., has denied intentions of re-entering the spun silk business, as recently reported, but will continue on present basis of selling spun silk fabrics in its regular lines, as in the past.

Carl Stohn, Inc., Hyde Park, Mass., cotton and rayon goods, has completed installation of machinery in the new 30x80 ft. finishing plant, erected at a cost of about $30,000 including the machinery. The expansion is expected to provide work for a number of new employees.

Morgan Silk Co., Paterson, N. J. James A. Daly, Paterson, has been appointed receiver for this company.

Hillcrest Silk Mills, with executive headquarters at 136 Madison Ave., New York City, and operating weaving plants at High Point, N. C., and Berryville, Va., have acquired the Reidsville (N. C.) branch plant of **Klotz Silk Mfg. Co., Inc.,** and operations were resumed there Feb. 2. The addition of the Reidsville unit gives Hillcrest Silk Mills a total of 550 looms, running full day and night shifts, according to W. L. Sprye, of High Point, superintendent of operations. Facilities for the manufacture of silk goods at the Berryville plant are being expanded and the company plans to increase the number of its mills in the near future.

Jupiter Textile Co., Watervliet, N. Y., has been incorporated by a group of Albany business men and negotiations have virtually been concluded for taking over the former plant of the **Federal Spun Silk Co.,** in that city.

Champlain Silk Mills, Whitehall, N. Y., have suspended operations and rumors persist that the property is to be taken over by the **American Silk Spinning Co.,** of Providence, R. I.

Alamance Weaving Co., Burlington, N. C., recently purchased 48 new Crompton & Knowles silk looms. Installation of this equipment will begin at once.

Pinehurst Silk Mills, Inc., Hemp, N. C., which were acquired last fall by J. Spencer Love and associates, of Burlington, N. C., have purchased 72 silk looms from the Crompton & Knowles Loom Works.

Allentown (Pa.) Weaving Co., recently organized with a capital of $25,000, to operate a local silk mill, will be represented by Thomas E. Weaver, 537 Howertown Rd., Catasauqua, Pa., one of the incorporators, who has been elected treasurer of the company. Ruth C. Dieter, 1402 Turner St., Allentown, is another incorporator.

Stunzi Sons Silk Mill, Lancaster, Pa., employing more than 300 persons, is now operating on full-time with night shifts in some departments.

Lancaster Silk Mills, Inc., Myerstown, Pa. John C. Orr, Harrisburg, Pa.; C. Vincent Henry, Jr., Lebanon, Pa.; and the Irving Trust Co., New York, have been appointed receivers for this company. The assets of the company will be appraised at once.

***Brupbacher Silk Mills, Ltd.,** Valleyfield (Que., Can.) are now getting into production in their new building. The plant consists of four buildings of the very latest type of textile mill construction, including the main building, a two-story brick structure, 254x74 ft., containing the beaming and warping departments on the top floor with weave room and examining department on the first floor. The office building is a two-story structure with basement. Throwing and spinning departments are in a one-story building, 237x77 ft. The weaving room is equipped with 144 silk looms, supplied by the Crompton & Knowles Loom Works, Worcester, Mass. The equipment in the spinning and throwing department is supplied by the Atwood Machine Co., Stonington, Conn. Officers of the company are: E. W. Brupbacher, president, J. L. Hodges, vice-president, and R. O. Sweezy and Eric Muelberger, directors.

Finishing

***Keystone Finishing Mills,** Burlington, N. C., have completed the removal of their plant to Asheboro, N. C., and will develop a full-time production schedule at once at the new location, giving employment to about 150 persons.

John J. Holder Dye Works, Inc., Paterson, N. J., recently organized with a capital of 2,500 shares of stock, no par value, to operate a local mill, will be represented by Wilcox, Swiger, Chambers & Scandrett, 60 East 42nd St., New York, attorneys. The incorporators include John J. Holder and M. M. Mooney.

Amalgamated Dyeing & Finishing Co., Allentown, Pa., located at Third & Walnut Sts., has been purchased by William R. Thomas, of Catasauqua, Pa., for $65,000, according to deed on record.

Amber Dye Works, Inc., Philadelphia, Pa. An involuntary petition in bankruptcy has been filed against this company by a number of creditors.

Associated Dyeing & Printing Co., Paterson, N. J., has asked bids on general contract for a one-story brick addition, 100x175 ft., at its local Colt Works, to be equipped as a finishing unit. It will be located at the corner of Pennsylvania and Kentucky Aves.

Questions and Answers

We undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to TEXTILE WORLD. We do not undertake, however, routine analysis of yarn or fabric, or investigation involving unusual expense.

Inquiries should give the fullest information and data possible. In the case of damage to material, a sample should be sent. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as evidence of good faith.

Letters expressing opinions or voicing criticism are cordially invited. These will be signed by the correspondent's name unless the letter itself contains a request that the name be withheld.

—EDITOR.

Weaving Fabric with Two-and-Two Effect in Filling

Technical Editor:

The writer would much appreciate your giving some information regarding the method of controlling the take-up or let-off in order to produce the two-and-two effect of the filling picks in the enclosed sample. This cloth will undoubtedly be woven on an 80-in. Draper automatic with which we have experimented extensively. To date we have been unable to perfect a satisfactory motion that would enable us to lay the filling in twos. (7465)

Experiments conducted in an attempt to make this type of fabric have shown that it can be made by a check or let-back motion on the pawl or a let-back on the worm gear or ratchet gear of the loom.

We assume that the sample submitted was woven on a plain loom. If the sand roll is operated by a take-up and let-back pawl, a suitable connection can easily be made from a two-pick selvage motion, so that the check pawl (not the take-up pawl) can be lifted for two picks. This would prevent the take-up pawl from turning the sand roller for two picks, and these two picks inserted by the shuttle would be placed close together. The second of the two picks would be bumped close to the first, because the warp yarn would not be taken up by the take-up motion. On the following or third pick the warp would be taken up, and the third and fourth picks would be placed close together. In this manner a clean separation can be made between each group of two picks.

If the loom is equipped with a worm-gear take-up, all that will be necessary will be to lift the worm drive rod from the worm ratchet for two picks, using the two-pick selvage motion for this purpose of lifting and permitting the take-up to operate every two picks.

We do not know of any other sure method by which this pairing or "twoey" effect can be produced. It is possible to produce a pairing effect on cloths of light sley and pick by manipulating the harnesses so that one harness or one set of harnesses making one shed will rise higher and fall lower than the other. If four harnesses are used and they are rising and falling with the two front harnesses together and the two back harnesses together, the front or back pair of harnesses can be given a greater rise and fall. This will give a very prominent pairing effect in the cloth. This method is not as sure as the first mentioned, but it will work just as long as the harnesses can be kept in the position that produces the pairing effect. Unfortunately the stretching of a harness strap is liable to nullify the desired effect. When trying to secure a pairing effect on any cloth of light sley and pick, it is well to set the harness cams so that the shed will close early.

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Wool Scouring and Carbonizing

Technical Editor:

The writer is a foreman wool scourer and would appreciate it if you would name some publication which explains the bleaching of wool in the scouring bowls of the modern wool washer. Also, will you outline the method used in carbonizing wools by the machine process. I am familiar with the sulfuric acid process and aluminum process in the tank method, but should like some information as to the average strength of each solution to use in the machine method. (7436)

In the scouring bowls of modern wool washers, no actual bleaching takes place. The color of wool fiber is due to the pigmentation contained in the canal, and it can be removed completely only by contact with some reducing or oxidizing agent present in the sulfur or peroxide bleach. With a modern four- or five-bowl wool washer with an adequate supply of good water, the best that can be expected is proper scouring. No real bleaching can take place. Even when wool is subjected to the action of hydrogen peroxide, it takes some time in a relatively concentrated solution to get a good bleach; and attempts to use peroxide in the scouring machine have met with little success.

It is possible to vary the color of the wool by various scouring methods, but this change is due to the success with which the dirt and natural oils are removed from the greasy wool. Different scouring methods will result in a lofty, white wool; or a dull, dingy product from the same machine and from the same lot.

It is possible that you have in mind the use of dyestuffs in the last bowl. Some scourers delude themselves into thinking that the naturally yellow wools are improved in appearance by the addition of an aniline blue in the rinse water. This treatment undoubtedly knocks down the yellow appearance, and to the untrained eye may give a false impression of giving a whiter stock. It is only an impression, because any dyestuff added to any raw stock is an approach to black and not white. Tinting of laundered or finished fabrics should not be confused with the tinting of scoured wool. In the former case you are dealing with a finished product ready for the dinner table or to be worn; and the apparent whiteness is pleasing and beneficial. The same tinting of raw stock is merely a delusion, because the raw stock is not actually any whiter, and the appearance of whiteness is lost in the various processes of the manufacture into cloth.

A tinted wool can be told by any practical wool man; and the attempt of the wool

merchant to get a higher price for such product is not justified. Despite this fact, it is a common practice to tint wool, and any of the dyestuff companies would be glad to furnish a suitable soluble aniline dye for such purpose. The result, however, is not bleaching, but tinting.

When carbonizing wools by the machine process, in general the Baumé strength of either sulfuric acid or aluminum chloride is increased from 2 to 3° over the tank method. We call attention to page 93 of the Sept. 7, 1929, issue of TEXTILE WORLD which contains additional information on the continuous carbonizing process and equipment.

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Silk Discolored in Steaming

Technical Editor:

I am sending you three cones, marked 1, 2, and 3. Cone 3 is gray. Cones 1 and 2 have faded to a brown or tan. Why have cones 1 and 2 become discolored? This discoloration will not boil off and is causing considerable trouble. The silk is not discolored when it comes from the soaking bath. We set our twist by placing our shafts in a steam box for four hours. The steam jets are open, beneath a board floor. Our soaking formula for 200 lb. of silk is as follows: 200 gal. water, 16 pints olive-neats oil (70% neatsfoot and 30% olive oil), 6 lb. olive-chip soap, 1½ oz. gray throwster's tint. The temperature of bath is 85 to 90° F. (7403)

We have boiled off the silk on the three cones in a neutral soap bath for ½ hour. Cones 1 and 2 boiled off to a cream shade, while cone 3 boiled off to a pure white. Your soaking formula contains nothing that will permanently discolor silk. The clue to the discoloring of cones 1 and 2 appears in the long steaming time and the wooden flood in the steaming room. If the wooden floor is oak or chestnut, the long steaming may cause vapors to rise from the wood and stain the shafts nearest the floor. If chemicals are used to correct lime and other salts in the water used in the boilers, the steam may carry over small amounts of chemicals, and case a permanent stain.

Our suggestions are that you reduce the steaming time to two 15-min. periods. Allow 15 min. between each steaming and remove the shafts from the steaming room so as to get quick cooling off and drying. The thread does not set until the silk is removed from the steaming room and the thread cools and dries. By steaming twice, a double action is provided and a more permanent setting is attained. If the shorter steaming time does not correct the trouble, replace the wooden floor with a cast-iron plate or steel grating.

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Holes in Full-Fashioned Stockings

Technical Editor:

We are enclosing three stockings showing holes. We are having a great deal of difficulty with this condition and have been unable to trace the source. These holes appear in from 5 to 10% of our production, and they appear at various places in the stocking; that is, not simply in the leg, but in the foot also. You will note that these holes are clear holes. Of course the drop stitching resulted in the boarding. You will also note there are no pulled threads.

THOUSANDS of inquiries are handled annually by the Technical Editors. In order that as many readers as possible may benefit from this service, we select problems of general interest for publication each week.

We are quite certain that the holes are not caused in the boarding, as our machines have been carefully gone over with fine emery paper and steel wool. We have also gone over all work benches and places with which the goods come in contact. The stocking is knitted on 42-gauge machines, is a four-thread, 81% silk, thrown twenty turns to the inch. The concern throwing the silk has had very limited experience with throwing high-twist yarn. The silk is conditioned in a humidifying room for 24 hours before knitting. (7447)

Judging by the size and character of the holes, it might be assumed that a group of stitches had been cut away by scissors or burned away by some chemical. Upon testing the threads adjoining the hole for breaking strength, we found no tendering. We cut another large hole in the stocking above the hole to be examined and raveled the fabric to the small hole to see whether more than one course was broken. We found that each course raveled continuously across the hole, with the exception of the one cut course. This seems to indicate that the round, clear hole was only a cut thread in the gray stocking which stretched to this shape in the boarding. Since there is no indication of any pulled threads, and since the broken thread is clean cut, we eliminate any source of trouble in dyeing and finishing.

We find, upon examination of the machine markings, that two of the samples were knit on the same legger, while all three of the samples were knit on the same footer. It is possible that the trouble is confined to one or two machines. We have seen similar holes caused by a knitter with a hand full of rods, attempting to remove the welt rods and letting the ends of the rods fall against the fabric crossing the bed plate. Holes from such a cause usually occur just above the high-spliced heel. We have also seen similar holes caused by pinching the fabric between the collars on the shifting rod and the shifting-rod hanger on the footers. Hard-twist silk is more susceptible to cuts of this character than is soft-twist tram.

We are inclined to believe, however, from the large number of holes which you say you are getting, that the trouble must be in the knitting machine. We suggest that you knit sample sets from each machine represented by these holes and number each head with a chalk mark on the hem of the stocking. Then seam and loop these sets, put them on an expanding inspecting form, and stretch them until the cut stitch shows up. By counting the wales from the edge of the stocking to the hole, the trouble can be traced to the actual needle of a given head on which the defective stocking was knitted. To conclude, we believe the trouble can be traced back to the knitting machine and corrected there.

New Machinery & Processes

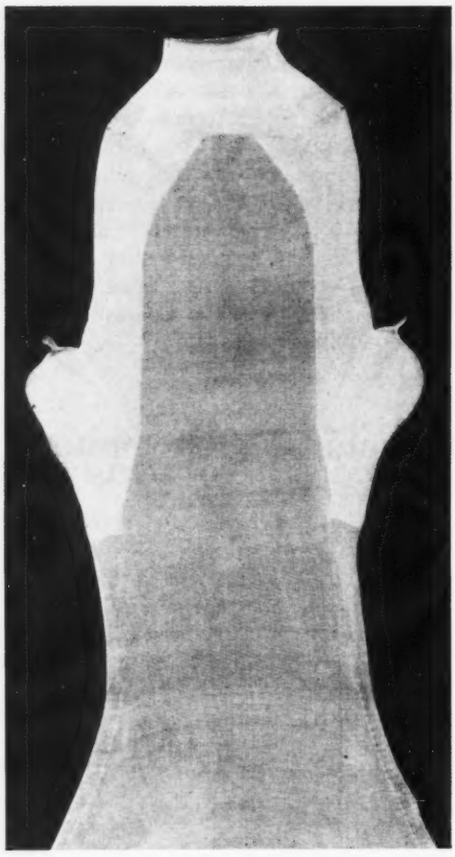
Three Single-Unit Full-Fashioned Hosiery Machines

THE expected has happened, in that announcements have just been made by three hosiery-machinery concerns to the effect that single-unit full-fashioned machines, combining the functions of the legger and the footer, will shortly be available to the American hosiery industry. One of these, the first to be announced, is an Einsiedel-Reiner machine developed entirely at the Weehawken, N. J., plant of Robert Reiner, Inc.; one is a Karl Lieberknecht machine to be imported from Germany by Louis Hirsch Textile Machines, Inc., New York; and the other, also a German development, is a G. Hilscher machine to be imported by the Grosser Knitting Machine Co., New York. Other similar announcements are expected to be made shortly by other builders of full-fashioned hosiery machines. Details of only the first of the machines mentioned above are as yet available.

The Reiner single-unit machine is known as the model 3-T, a designation derived from the initials of the words "top to toe," and signifying the knitting of the entire stocking on one machine. It is said to be capable of knitting nine to eleven dozen pairs per ten-hour day. The machine is in reality a converted Einsiedel-Reiner legger and will be sold at approximately a 15% higher price than the machine from which it is derived. At a later date arrangements may be made to convert leggers already in operation into model 3-T's. Although the invention originated at the Reiner plant in Weehawken, the machines will be manufactured at the German plant, and first deliveries may be expected about June.

Several machines are now being demonstrated in the Weehawken plant; and one of these, a 45-gauge model, is running at a speed of 62 courses per minute on four-thread silk, 50 courses per inch.

The stumbling block hitherto hindering the development of a single-unit machine has been the formation of a satisfactory heel; hence it is of first importance to study the construction of this part of the Reiner stocking. The stocking is knitted as usual as far as the former topping point. Here the carriers for the instep and heel-splicing yarns begin widening the fabric one needle each course. The heel-splicing carriers relinquish an inner needle at each widening; and on these needles, in the place of the heel-splicing yarn, is introduced the



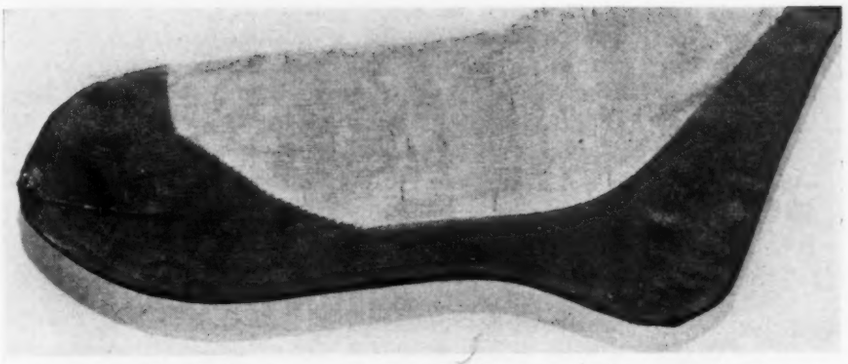
Einsiedel-Reiner single-unit stocking before looping and seaming

sole-splicing yarn by means of an additional set of carriers, the two splicing yarns overlapping on two needles at each course. Hence, as the strip of heel splice moves outward, retaining its established width (but, with the instep yarn, increasing the width of the stocking), the sole splice expands in width, filling in the gradually widening space between the heel splice and the instep fabric. Narrowing of the heel is accomplished near the outer edge of the heel splice as it approaches the bottom of the heel. When the bottom of the heel is reached, the main or instep carrier reduces its traverse to the outer edges of the sole fabric, and the heel splice knits a few ravel courses before being cast off the needles.

It may be seen that the heel-splice yarn serves to knit two strips of fabric corresponding to some extent to the usual heel flaps; but since these heel flaps are interlocked with the sole yarn by stitches extending over two needles on each course, the juncture is stronger and better able to withstand the strain during wearing than is the ordinary heel gore. It also prevents heel runs from extending down the foot. The widening by one needle at a time forms a ravel-proof selvage.

Dr. Reiner called the writer's attention particularly to the new toe, known as the "ring toe," which the model 3-T makes. This consists of an extra splicing enclosing the wearer's toes on the bottom, sides, and top. The toe is formed by a simple narrowing operation, and is said to fit snugly without an excess of fabric and to afford improved strength. An attachment may be applied for knitting the diamond-shaped gusset toe if desired.

The machine is adjustable at the former topping point to control any desired number of needles in the instep in



Finished Einsiedel-Reiner single-unit stocking mounted on improvised form

order to accommodate varying sizes. By this means, it is said, the fabric can be knit to cover the instep without stretching the instep wales or leaving loose fabric at the heel. The control of the carriers permits knitting all-silk heel and sole, all-silk heel with plated or split sole, and all-silk sole with plated or split heel.

Improved Ager

DEVELOPMENT of an improved ager which is designed to avoid damage to fabrics due to condensation has been announced by New England Butt Co., Providence, R. I. Another outstanding feature of this equipment is a preheating chamber which brings cloth to temperature before entering ager proper.

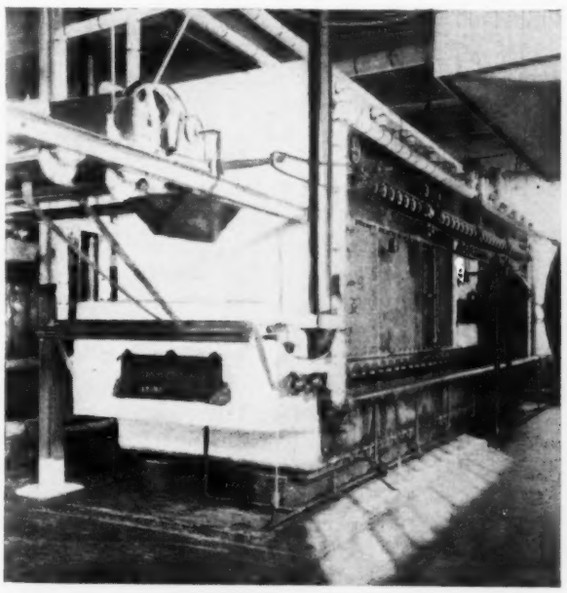
The preheating chamber consists of a steam-heated cast-iron box, approximately 2x2 ft. and the width of the machine, attached to the lower section of the entering end of the ager. Cloth enters the antechamber through a slit and goes around two rolls, before entering the ager proper through another slit. Upon leaving the ager, the cloth passes through the preheating chamber. At each end of the chamber are vents which extend upward to the roof, ending in cowls. By means of this arrangement the cloth is brought up to temperature before entering the ager proper, fumes are vented, and a large proportion of the steam clinging to the fabric as it leaves the ager is carried off, thus making the machine a unit with little effect upon the room in which it is.

To prevent damage due to condensation, a lip to catch condensation is provided on the slit by which the cloth enters and leaves the preheating chamber. Similar lips shield the slit leading in and out of the antechamber to the ager proper and all joints of the steam chests at the top of the ager. In addition, other places where condensation is liable to take place, such as around the doors, are similarly protected. Where necessary, heated rolls are provided to evaporate any water which collects in the lips.

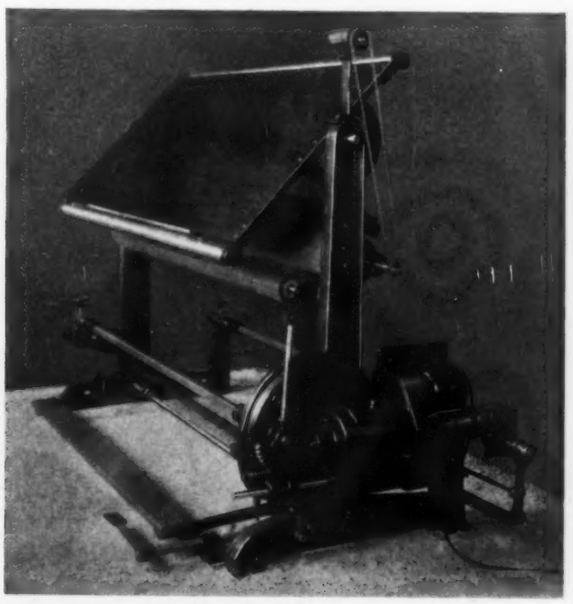
All jointed surfaces of the ager are accurately finished, thus assuring tight joints. The doors are fitted with swivel brackets, which enable them to combine the ability to swing open on hinges with the cam type of closing to insure a tight fit. All rolls are carried in special ball-bearing housings, the bearings being situated on the outside of the machine away from any action of the steam. The drive is from a 5-hp. motor, with a 16:1 worm-gear reduction. A three-speed control allows the time required for the cloth to pass through the ager to be varied from $2\frac{1}{2}$ to $7\frac{1}{2}$ minutes. From the worm gear the drive is to a sprocket and chain. The chain engages all the top rolls of the ager, and a track guard situated over the roll sprockets prevents jumping of the chain. It is stated that less than 1 hp. is used to drive the ager.

Inspecting and Measuring Machine

ON INSPECTING and measuring machine for handling goods from one roll to another has been placed on the market recently by Curtis & Marble Machine Co., Worcester, Mass. Since machine is equipped with ball bearings, it is suitable for silk, rayon, and light cotton fabrics. The goods pass around a measuring drum which is connected by chain to a counter. The winding spindles are driven through a variable-speed friction-plate drive. This feature permits the speed to be adjusted for different weights of goods and in making fairly large rolls where the speed of the cloth increases



Improved ager designed to prevent damage to fabrics



Inspecting and measuring machine with variable-speed

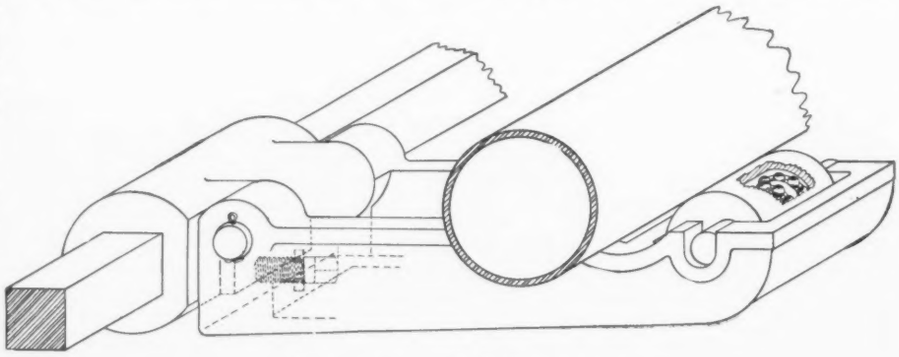
with the increase in diameter of the roll of goods which is being wound. Operation of the variable-speed forward motion is by means of a foot treadle extending across the front of the machine. There is also a pedal for operating a constant-speed reverse, thus leaving no excuse for operators to allow defects to go by unmarked or unremedied. The machine is driven by a ¼-hp. motor which can be operated from any lamp socket.

Slasher Press Roll

REDUCTION of number of loom stops, less variation in picks, and absence of waviness in woven fabrics are among the outstanding advantages claimed for a new type of slasher press roll placed on the market recently by Saco-Lowell shops, 147 Milk Street, Boston, Mass. This increased weave-room efficiency is said to follow the production of truly concentric warps which is made possible by the improved roll.

To overcome the irregularities resulting from wear and tear on the slasher and loom beams, a new press-roll arm has been designed which is provided with an adjustment whereby the press roll can be raised or lowered so as to bring it in line with the barrel of the beam when the friction is applied. Made in two sections, the forward one swings on a stand and is held in position with a locked cap screw. When the press roll is brought in contact with the beam and the friction is applied, the adjustable arm is set in line with the solid arm, bringing the surface of the roll in contact with the beam at all points. With the roll properly in line, there is little chance for it to crawl from one head to the other, thus preventing cutting selvages, which may be caught and pinched between the edge of the roll and the head of the beam.

After being used a comparatively short length of time, the surface of the roll, on account of contact under pressure with the sized yarn, becomes quite glazed. To eliminate loss of traction which would allow the press roll to slide on the yarn and thereby destroy the concentricity of the warp, ball-bearing truck rolls for the press-roll arms are provided. These bearings require so little traction to revolve them that no matter how glazed the surface of the press roll may become, there still remains sufficient traction to turn the trucks. The new press roll arm may be readily attached to slashers already installed and it will be standard on all new Saco-Lowell slashers.

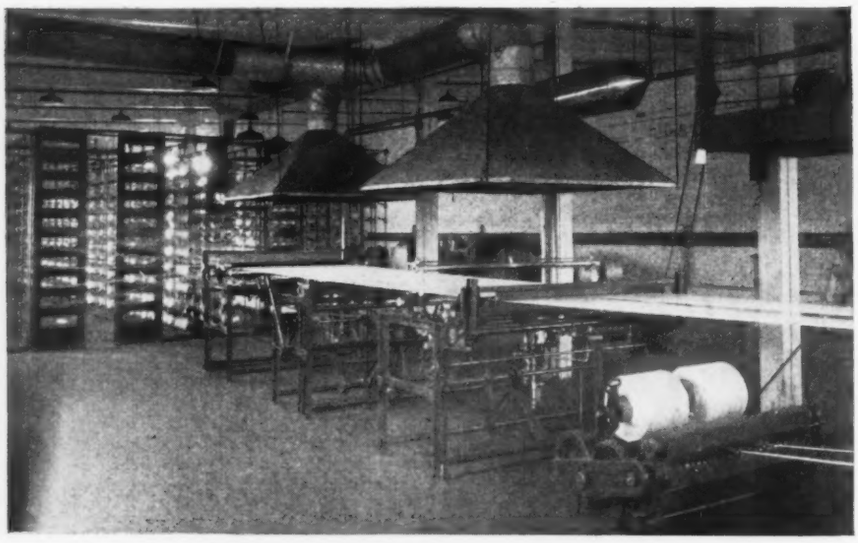


Slasher press roll designed to give truly concentric warps

Combination Warping and Gassing Equipment

FOR handling either balled or beamed warps, the Cocker Machine & Foundry Co., Gastonia, N. C., has developed a combination warping and gassing equipment of a new type designed to give increased economy in time, labor, floor space, and fuel consumption, and at the same time to singe the yarn during the warping operation both from above and below. In addition, the new gassing equipment is furnished for handling yarn which comes to the machine in warp form. The gassing machine itself is the same for each type of equipment, and has been designed to minimize the possibility of under-singed or burned yarn.

There is no gas carriage which must be moved by the operator; and therefore no tracks are necessary. The burner action is automatically controlled through the starting lever of the machine and provides one bottom flame and one top flame for the sheet of yarn. This arrangement is said to give a maximum singeing with a minimum amount of gas. The action of stopping the machine closes the gas feed to the burners, except for a small pilot light which lights the burners again when the action of starting the machine automatically releases gas to the burners. In this way waste of gas when the machine is stopped is avoided.



Combination warping and gassing machine handles either balled or beamed warps

The new machine is equipped with double burners, one of which may be termed the "constant burner," and the other, the "intermittent burner." The constant burner, with its two flames, performs the singeing operation with the machine in action, while the other burner is brought into action only for the short period necessary to singe the yarn missed by the constant burner in the action of stopping the machine.

The machine is featured by its simplicity. Moving of both burners to and away from the yarn in starting and stopping the machine, closing and releasing of gas supply to the burners, and moving the intermittent burner out of singeing position when the machine attains its regular operating speed, all are mechanically controlled through the one starting lever. The motor drive is equipped with a magnetic brake to insure quick stopping action.

Three types of equipment are offered by the manufacturers. In the first type, which merely replaces the ordinary gas carriage machines, the un-singed yarn is drawn from the beam or the balled warp through the gassing machine by either a beamer head or a baller head. This equipment delivers the singed yarn in the same form as received ready to be handled in subsequent operations of beaming, dyeing or mercerizing.

The second type, which is shown in the accompanying illustration, consists of combination warping and gassing equipment complete with the Cocker magazine type of cone creel. The improved electrical eyeboard stop motion, which automatically stops the machine for broken ends and leases, is furnished complete with annunciator equipment for indicating to the operator the location of broken ends in the creel, and also lease stops.

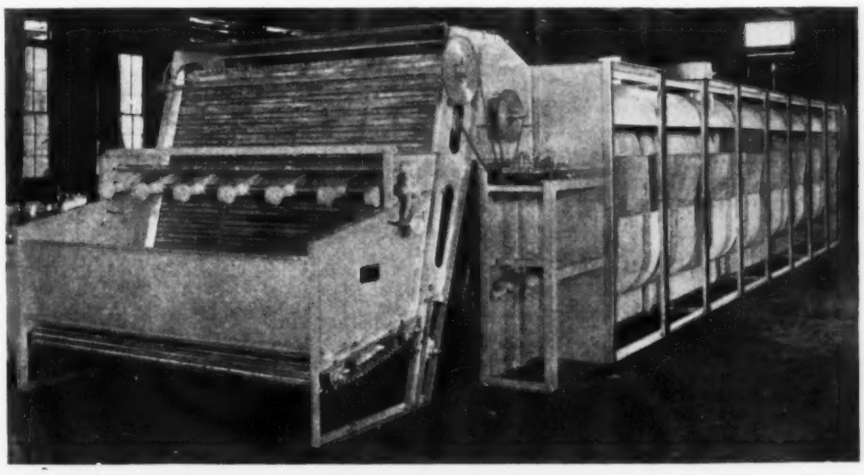
The third type is somewhat similar to the second, makes possible the warping and gassing of yarn direct from twister bobbins placed in a magazine creel. However, as the ply yarn is handled direct from the twister bobbins instead of from cones, the process of winding or spooling is eliminated. A slight change in the builder cam of the twister enables winding a short tail on the bobbin for magazining in the creel.

For preparation of the singed yarn in balled warps, the gassing machine is equipped with a high-speed baller head arranged to make one standard 30-in. traverse ball; or, as illustrated, two 14-in. traverse balls. Draw rollers deliver the singed warp to the baller head. The tension at which the warp is balled is controlled through a variable-speed connecting drive between the draw rollers and the baller head. The machine is also equipped with an automatic counter clock.

the outstanding characteristics of this new equipment is a gang of three double-width, double-inlet, curved-blade centrifugal fans in each dryer unit or section. These fans are said to give a greatly increased circulation, while their high static efficiency and limiting-horsepower characteristic, together with streamlined air passages, make possible the unusually low power requirements and large reserve drying capacity.

Another important feature is the provision of a Reeves variable-speed transmission as regular equipment in connection with the self-feed appliance of the dryer. This makes it possible by merely turning an adjusting hand wheel to vary the speed of the spike-feed apron to conform to the stock being handled and to obtain an infinite range of speeds within the ratio limit.

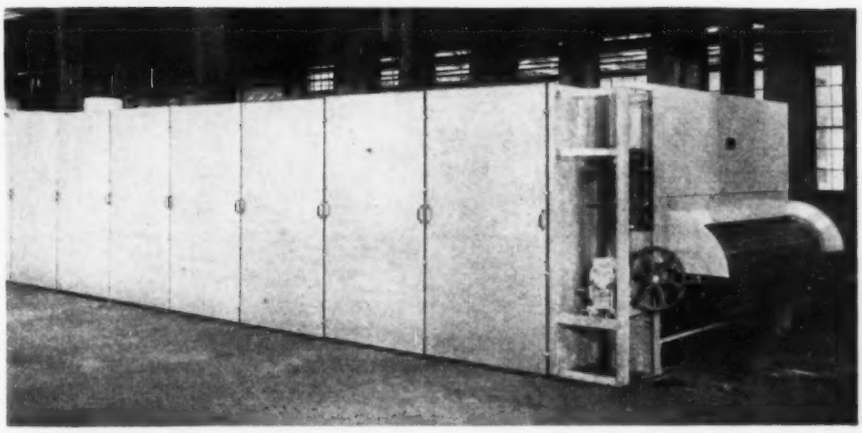
The feeder, which is accessible and easily cleaned, is of improved design and heavy construction, and is rigid and silent in operation. The dryer apron is also of unique construction, being formed of a series of interlocking and interlaced, perforated, cold-rolled steel plates. This type apron is designed to provide the maximum of free air passage, and to eliminate droppings and loss of stock. It is securely attached on both sides to a heavy roller-type chain to insure ruggedness, rigidity, long life, and negligible repairs. Since the apron is also provided with a Reeves variable-speed transmission, any range in speed on both the feeder and the apron is at the command of the operator. This feature enables the operator to vary the speed according *(Continued on page 54)*



A self-feed appliance equipped with variable-speed transmission is a feature of this stock dryer

Single-Apron Stock Dryer

A NEW single-apron stock dryer, embodying a number of unusual features, has been placed on the market recently by the Buck Dryer Corp., 122 East 42nd St., New York. The machine is intended for the drying of wool, cotton, rags, and other fibrous materials, as well as for carbonizing. Among the advantages claimed for the dryer are great flexibility, high production per unit floor area, small power requirements, and low operating costs. One of



Standardized units or sections used in the construction of this single-apron stock dryer

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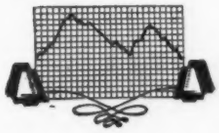
TEXTILE WORLD ANALYST



Gradual Stabilization Ahead for Wool Goods

Conservative Manufacturing and Orderly Marketing Are Helping Trade, Says Dr. Haney

Summary: **Wool manufacturing activity is being kept well curtailed and stocks of goods are low. Worsted spindle activity has been brought more nearly in line with weavers' requirements. Although wool stocks are large, they are being marketed in an orderly fashion and manufacturers are not carrying the load. While some further recession in the prices of wool and wool textiles are to be expected, manufacturers' replacement margins should be well maintained, and the industry continues in good shape to respond promptly to any improvement in demand. Gradual stabilization may be expected.**

●

The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.

THE new year opened with raw wool markets weak and restriction of offerings alone preventing declines from becoming more drastic. As was the case a year ago, prices broke when the attempt was made to move the old clip. Burdensome supplies still present a problem, and the fact that raw wool may be selling below cost is no indication that it will not go lower. Apparently the partial recovery at London toward the end of the auction has tended to keep that market above parity with the primary markets.

Further weakness of exchange rates in several southern hemisphere countries continues to act as a depressing force elsewhere. Foreign wool is said to be close to parity with domestic grades.

The manufacture of wool textiles is in a depressed condition throughout the world and, while some improvement may have taken place in January, the continued low purchasing power of consumers still tends to prevent any sustained recovery. Women's wear business has been doing fairly well, but men's wear has on the whole been a disappointment.

Favorable Factors

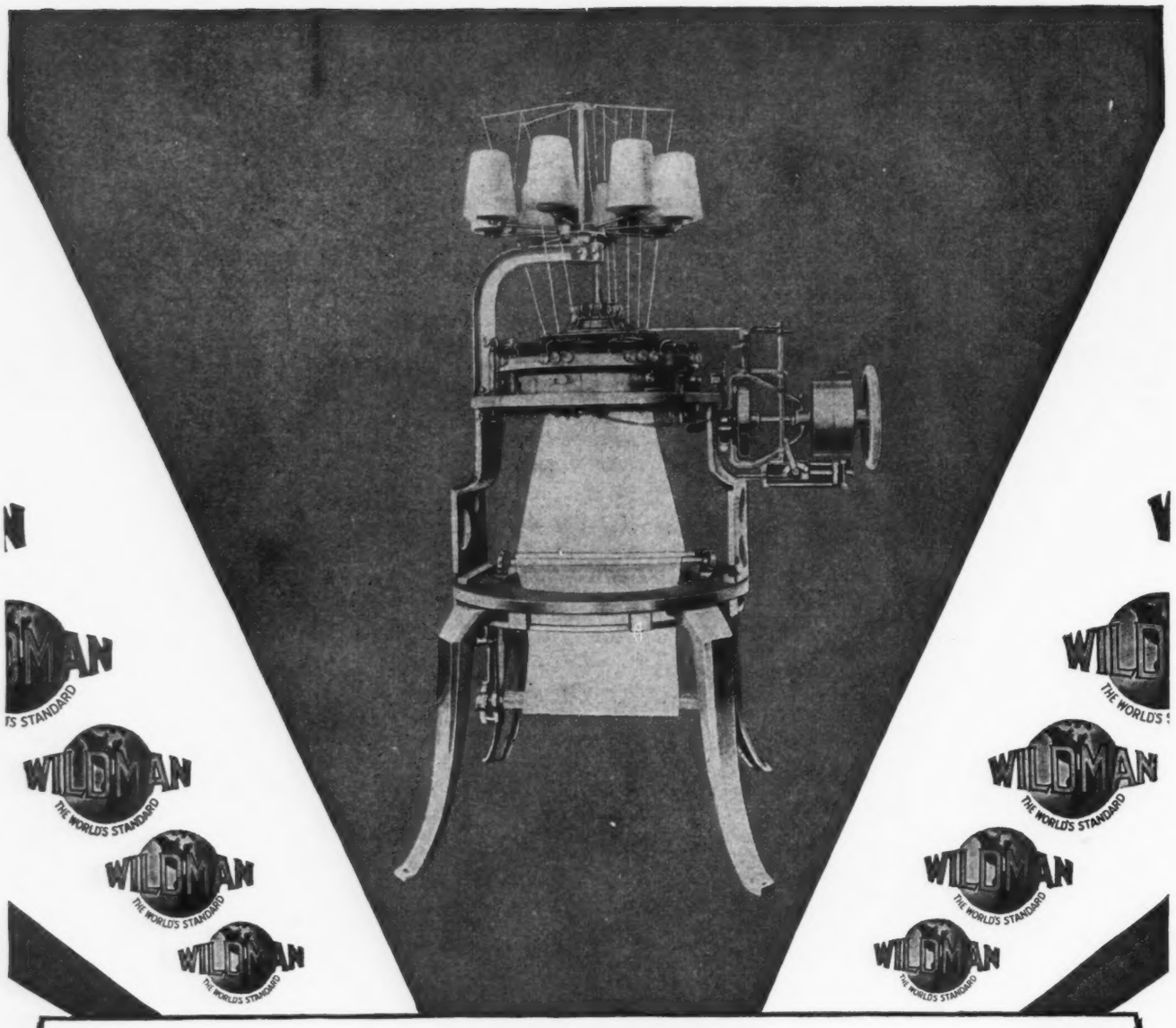
The factors which tend to support the price of raw wool follow:

1. London auctions closed 7½ to 10% above the opening, and primary markets responded to this recovery.
2. Rationing of raw wool supplies continues in practically all world markets, probably insuring that any further declines will be orderly and moderate. The marketing corporation controls half of the domestic supply in this country.
3. Imports of raw wool continue small, and are low in comparison with consumption.
4. Total receipts of raw wool at Boston have declined more than seasonally and are well below their average relationship to mill consumption.
5. Mill stocks are small as the manufacturers have continued to buy from hand to mouth.
6. The price of Bradford tops has rebounded from recent lows.
7. The activity of combs increased sharply in December.
8. Many cloths are at pre-war price levels.
9. Dry goods sales increased in December.
10. The women's wear business is reported to have been good in January.
11. The advance in raw cotton reduced the spread between it and raw wool.

Unfavorable Factors

The factors which tend to depress the price of raw wool follow:

1. Rationing of raw wool supplies is still world-wide and indicates that if the markets were free, prices would decline further.
2. Declines at the London auctions in January were as high as 25% at the opening. Only by withdrawing 90,000 bales and shortening the period of sales was artificial strength in quotations brought about.
3. Bradford top prices in January touched the lowest point in about 30 years.
4. Stocks in sight continue large and a large carryover is likely.
5. Mill consumption and machinery activity averaged lower in December.
6. Average replacement margins of spinners were lower in January.
7. The quantity of clothing cut in November was far below a year ago.
8. Automobile production is no longer increasing as much as usual for the season. Upholstery fabric production will be affected thereby.
9. The recent setback in raw silk prices enhances its position as a competitor of wool.
10. General business continues de-



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WILDMAN
SPRING NEEDLE BODY MACHINE

pressed and the P-V Line gives no encouragement for the near future.

The above list of favorable and unfavorable factors indicates the continued weak position of raw wool markets. Nothing of a positive nature has been added to the favorable side. In fact, most of these arguments for stronger raw wool prices could have been made a year ago; nevertheless prices have declined nearly 25% since January, 1930.

Raw Wool Prices Weak

In January, the Textile World index of raw wool prices fell to 59.0% of the average for 1921-28. This compares with an index of 62.5% during December and 77.8% a year ago. It is the lowest point touched by the index since September, 1921, in which month the post-war low was recorded.

Activity of wool machinery showed no improvement in December, and the index of mill consumption also declined. This condition indicates a lack of improvement in demand, and is accompanied by a waiting attitude on the part of manufacturers.

With hand-to-mouth buying continuing, the stocks in sight appear to be large, and although these appear to be strongly held, their pressure on the market is more uncertain than if they were in the hands of growers or manufacturers. It is estimated that the domestic supply was around 150,000,000 lb. at the beginning of the year. A large carryover is certain and, if the sheep population gives any clue, the new clip is likely to be large.

Domestic receipts and imports, however, continue to be small. Estimated total receipts for the United States have fallen below their average relationship with mill consumption. This suggests that stocks are no longer piling up and that the raw wool market is likely to firm up whenever consumption increases,—provided that (1) the general level of commodity prices were to stabilize and that (2) foreign wool markets were to hold steady. It is not likely that these qualifications will be realized very soon. Leading indexes of commodity prices declined upwards of 2% in January and the foreign markets, especially London, would go lower still were it not for the rationing of supplies. Under the circumstances it is difficult to make a very convincing case against those who hold that further declines in raw wool prices are to be expected before any sustained recovery can develop.

Manufacturers Reduce Stocks

The month of December witnessed new lows for the indexes of mill consumption and spindle activity. The adjusted index of mill consumption was 60.6% of the average for 1921-28, against 62.9% in November and 79.5% a year ago. Trade reports indicate that there may have been some gain in January, however, and it can be said that the sensitive index of comb activity increased in December. The index of spindle activity in December was 61.9% of the 1921-28 average, against 64.0% in November and 76.1% a year ago. A comparison between the index of spindle activity and that of mill consumption shows that during the last year the larger percentage decline has occurred in the mill consumption.

A sustained gain in the volume of wool manufacturing awaits the recovery of general business from its depressed condition. The P-V Line is not rising toward normal, and until it crosses normal, business is not likely to show sustained improvement.

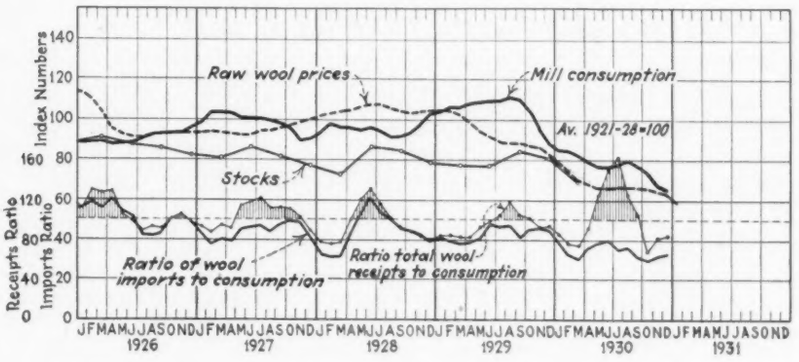

Fig. 1. RAW WOOL BAROMETER: Price—Textile World Index: Mill Consumption—Grease Equivalent, Average Daily Adjusted for Seasonal Variation, Three-Month Moving Average; Stocks—U. S. Total, Grease equivalent, End of Quarter, Adjusted for Seasonal Variation. Ratio of Total Raw Wool Receipts in the U. S. to Mill Consumption—Receipts not reduced to grease equivalent, adjusted for Seasonal Variation, Consumption as above, Three-Month Moving Average. Average for 1921-1928 = 100 for all four indexes, Ratio of Raw Wool Imports to Mill Consumption—Imports not reduced to grease equivalent, Adjusted for Seasonal Variation, Consumption as above, Average 1921-1928 = 50, three-month moving average.

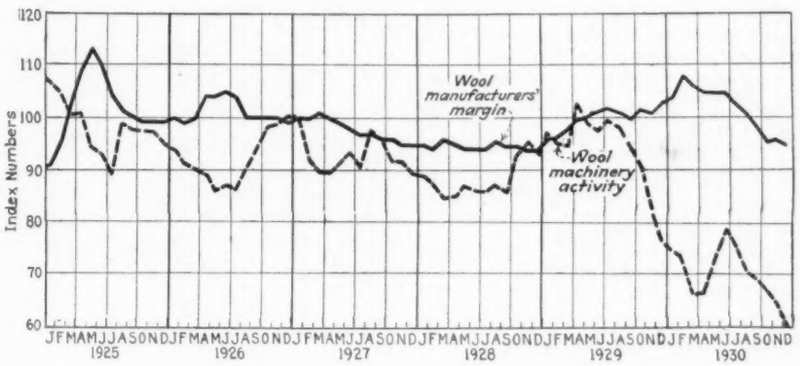

Fig. 2. WOOL MANUFACTURERS' MARGINS AND ACTIVITY: Wool Manufacturers' Margins — Average of Replacement Margins; Wool Machinery Activity—Composite of Loom and Spindle Activity, adjusted for seasonal variation; Average 1923-1927=100 for both indexes.

Yarn and Cloth Less Weak

Worsted sales yarn prices finally succumbed to lower raw wool prices and broke in January. For that month, the Textile World index of worsted yarn prices fell to 72.9% of the average for 1921-28, which compares with 75.9% in December and 87.2% in the first month of 1930. Yarn prices should average lower following the prolonged recession in raw wool markets. In fact, the drop in raw wool prices in January was smaller in terms of cents per pound than that which occurred in yarn prices. Consequently the average replacement margin of worsted sales yarn spinners declined sharply. There is some encouragement in the fact that the index of loom activity held up better than did that of spindle activity. This relation suggests that while spinners' replacement margins may fall further, they are not likely to fall as rapidly as in January.

The Bureau of Labor Statistics' index of woolen and worsted goods prices in December was 81.2% of the 1921-28 average, against 82.1% in November, and 93.4% a year ago. There has not been a single increase in this index for two years. While it is true that stocks of goods are small and loom activity has been curtailed further, the demand is weak and prices will probably decline further.

Cotton Market Higher

Price Fixing and Switching of Hedges Among the Features

THE cotton market has shown increasing activity and firmness during the week. No doubt this has resulted from increasing confidence in the outlook for a gradual improvement in trade and the prospect for a substantial reduction in the acreage. Some broadening of trade or speculative interest has been reported, but the trading has probably consisted largely of certain technical readjustments. There has, for instance, been a good deal of switching of hedges from near to late months, with such operations invited by the late month premiums, and business of this sort is supposed to have been partly for foreign account. In addition there has been buying of near months by spot people against sales of the later deliveries, while the latter have been sustained by replacing of spot sales with the premiums reflecting a certain degree of confidence in the future of the market. May contracts sold above the 11c. level, and October above 11½c., making the highest price touched here since the culmination of the mid-December decline at 9.80 for May and 10.22 for October on Dec. 15.

Considerable buying is believed to have been coming into the market here from the Far East. The statistical position of Indian cotton is strengthening, while the market for Egyptian cotton has recently shown a decidedly steadier tone. These are factors which would suggest lessening competition from outside growths for American cotton in the world's markets and there is said to have been some buying here to lift hedges against Indian cotton, as well as foreign trade buying to fix prices on American or against prospective needs. Houses with Japanese connections have been rather prominent on the buying side of the market at times, which, combined with reports that Japanese mills are planning to increase their running time by 3% beginning with April, has suggested improving conditions in the textile trade there. Meanwhile some increase of activity has been reported in the domestic mills referring, apparently, to some of the cloth mills in the South, and these features combined with the development of a steadier feeling in the stock market and some unfavorable features in winter weather conditions bearing upon the coming crop outlook, have been considered largely responsible for the advance of approximately $6 per bale from the low records of last December.

The weather in the South so far this winter has been dry and comparatively warm. More rain is needed to supply subsoil moisture and it is beginning to be apprehended that it may come at a time when it will delay farm work and the start of the crop. Moreover, unless temperatures drop lower within the next few weeks, it is felt that there may be an unusually heavy survival of insects, which will have to be contended with during the growing season. No more conclusive a light has been thrown upon the question of the coming acreage.

It is likely few now anticipate that world consumption will exceed 12¼ million bales for this season, and not a few think that it will be under that figure. It is felt, however, that business has turned the corner and that this view is encouraged by improving trade during the spring and summer, the trade at the beginning of next season will probably be inclined to count on a world's consumption of around 14 million bales. On this basis, a crop prospect of 12 million bales would point to such a reduction in the carry-over and probably justify a bullish position below 14c.

Cotton Quiet at Memphis

Memphis, Tenn., Feb. 9—While some cotton merchants report improvement in the cotton market here, the week was quiet on the whole. Sales totaled 11,816 bales against 15,402 bales the previous week; however the total for the corresponding week last year was only 8,388 bales against 24,274 in 1929. There was more interest in premium staples but less in other cottons, except ⅞ to 1 in. low grades. The staple association says more staple cottons have been sold in the last 10 days than in any other 10 days since early in the season; buyers, it is said, are extremely cautious and show no disposition to anticipate wants far in advance.

Continued demand for low grades, which has about exhausted the supply, has stiffened the basis but bases on the better grades remains about unchanged, perhaps a shade easier, although, with the wanted low grades scarce, there is somewhat better demand for strict low middling and middling. There is no selling pressure but the recent advance in contract values brought out some offerings of cotton heretofore held; most holders of cotton are those who are in position to hold indefinitely or who believe it advisable to wait until they can form some definite idea as to the new crop acreage. Acreage ideas are badly mixed; some insist that reduction will amount to not more than 10%, which might easily be offset by increased yield per acre, while others look for 25% or more. The weather has been ideal for farm work since about the middle of January. Much work has been accomplished in the last 10 days. Vegetation is beginning to come out.

◆Cotton Wastes Continue Dull

LITTLE improvement can be noted in the cotton waste situation. Demand is still of a hand-to-mouth character and the volume of business moving is very disappointing to dealers. One encouraging feature is the fact that prices continue to hold up well, there being no disposition on the part of dealers to force business by offering concessions.

There was a fair call for willowed picker reported from several sources this week, and also a few inquiries for white threads for machining purposes. Spinning materials are quite inactive, as are card wastes and stuffing stocks.

Yarns Slow to Follow Cotton

Raw Material Advance May Stimulate Trading

COTTON has been climbing higher but yarns have been standing still. Yarn prices show little change from last week although there is a stronger tone and spinners are less anxious to accept business in large volume at current level. This makes it appear definite that yarns are waiting for a spurt in demand before advancing notwithstanding the upturn in the raw material market.

The cotton spurt has caused surprise among yarn buyers and sellers because of its strength in the face of disappointing action in the yarn, and to a less extent in the cloth markets during recent weeks. Although raw material strength has not yet caused yarns to advance, its effect has been noticeable.

Dealers are receiving more inquiries than before the cotton rise, but spinners are willing to book only small orders at present prices. They feel definitely that yarns and spinning margins will increase during the coming months and they take only enough business to run their plants a few weeks ahead. This seems the reasonable course for them to follow now.

Inquiries More Numerous

This policy is evident to commission houses when forwarding inquiries to spinners. Mills that have recently booked enough business to run them for a few weeks, immediately raise their ideas substantially on additional orders.

making it impossible for dealers to close the business. They must then locate spinners who do not have enough to operate their mills for the next week and these will accommodate them for small quantities.

There is a general feeling that continued firmness in cotton and yarns will soon bring considerable buying volume into sight. Consumers of yarn have been waiting for some indication that prices were at the bottom.

Lower Prices in the South

In southern selling centers inquiries have been received with more frequency from both weavers and knitters, but the volume of business booked has not increased in proportion. Mercerizers are reported to be displaying more activity, and this has imparted a better tone to the combed yarn market.

Combed yarn spindles of the Gaston County area operated at 45½% of normal capacity last week. The desire to keep their plants operating, either to maintain their organizations or to pacify their bankers, evidently caused several carded spinners to accept business at prices below the general market level. Sales of 20s-2 warps were being noted at 20½c.

"On Again, Off Again" Cottons

Evidence of Poor Selling Tactics Seen in Market

COTTON goods are disappointing many who expected that statistical improvement would at once result in the mills obtaining a fair profit for their goods. The cloths that have been in the best position statistically have been cut in price along with all the rest when sellers wanted orders.

There has been admittedly a much smaller volume of business placed since the last reduction was made the middle of January; but trading has been of fair proportions. A number of sellers however have not been satisfied, as was true when the previous reductions were made effective, and the result has been that although cotton has been steady, print cloths have again been shaded.

Mill Profits Essential

Whether the answer is in the mill end, manufacturers pressing goods on the market when demand is not there to meet it, or whether selling houses are to blame for poor merchandising, are questions that should be considered if both are serious about improving conditions in the business to the extent that manufacturers will be able to show a fair profit at the end of 1931. Production will in most instances be along fair lines in proportion to consumption. This being true, the answer seems to be in the selling end, whether the goods are sold in an efficient manner or simply dumped at times. If the latter is to continue there will be lessened hope that black ink will predominate in mill statements a year from now.

When print cloths are easy in tone this is felt in other sections and within the last few days sheetings have met reductions. In this case reductions in prices have been primarily due to the fact that trading in sheetings until recently had been inactive. Sellers had more justification for this reduction than had the print cloth houses.

Wool Movement Continues Slow

Outlook for Higher Prices On Domestic Output Somewhat Dubious

THE wool market is still sensitive, confronted as it is by the two-fold task of selling a large surplus and of making arrangements for taking over the 1931 clip, which may be the largest in the history of the United States. The Co-operatives tied up about 35% of last year's clip, and may possibly handle a larger amount this year. Yet, in any event, there will be plenty of wool available for the domestic trade, particularly as two of the largest houses on the street have gone out of business.

Arizona, the earliest wool State, is in the lime-light at present, and is likely to witness a contest for the control of its relatively small clip of about 6 million pounds. The independents have stolen a march on the Co-operatives by the early acquisition of new wools, shearing of which is now proceeding. One Boston firm has bought one of the choicest clips in the State of about 125,000 lb., while another house has taken a choice clip of about 32,000 lb. which last year was handled by the National Wool Marketing Corp.

The domestic wool output, according to recent Government survey, is not particularly encouraging to those who look for a return to higher price levels. The main points of the report may be summarized as follows: Wool will have to adjust itself to a new economic level, lower than the average of the preceding five years; sheep numbers have increased 43% since 1922; the total number Jan. 1 was 52 millions, the largest number in the history of the country; stocks of clothing and combing wools in the United States are considerably larger than they were a year ago; however, some improvement in prices from current distressingly low levels is probable during the latter part of the year.

Foreign Market Improves

The foreign wool markets are showing improvement, London, Australia and Argentina all selling more wool at higher prices. Sales of wool at the London auctions, after recession, took a sharp upward turn in the closing days and the Bradford top market responded by an advance. Everybody seemed to arrive simultaneously at the conclusion that the depression had gone too far and that wool was indeed very cheap. A less favorable feature of the general wool situation is the report that New Zealand wool growers are refusing to offer their wools on current levels, the prices obtained on some of them hardly warranting the heavy transport charges from the interior.

Rags and Reworks Less Active

Reworked wools are not moving with any freedom, although a few small repeat orders are arriving at several of the manufacturing plants. The woolen rag situation shows no further improvement, nor on the other hand is there any reverse encountered on the generally more favorable situation that has developed since the first of the year. The market as a whole is running in low gear, and no speed will be attained until there is a much larger placing of business on woolen fabrics in the New York goods market.

Low priced wool substitutes ought to be in better demand as the weeks go by. It would seem almost impossible for woolen manufacture to meet the fall and winter demand for cheap good clothing, without having recourse to a larger consumption of these valuable raw materials.

Mills Shopping for Wastes

Wool wastes are on a rather steady basis, but buying is not particularly active. Inquiries are more numerous. Mills are shopping around, yet with wools so low there is not much temptation for manufacturers to purchase wastes for the construction of new lines of fabrics. In some quarters it is believed that wastes are priced out of proportion to wools at this time, but this is emphatically denied by leading waste dealers. It is not altogether a matter of price when it comes to mill buying and even if it were true that some wastes are relatively out of line with the wool basis manufacturers would nevertheless continue to use these mate-

rials in order to keep up their line of fabrics; the substitution of wool for certain types of waste would alter the appearance and feel of the fabrics.

Noils Demand Broadens

Compared with the beginning of the year the noil market is broader in range of demand and while not higher priced is encouraged by larger interests seen in the crossbred qualities which hitherto have been in exceedingly slow demand. The market seems fairly well sold up on fine and three-eighths domestic noils which are in the main below importing point of foreign materials. The best camel hair noil, whether single or recombed, is quoted around $1.50, medium quality $1.00; low quality, 75c.

◆Wool Goods Selling Actively

MEN'S wear and fabrics used in women's clothing are active. The question is, whether this spurt in sales is seasonal or something more significant. Most sellers assert that trading, while active, is only seasonal in volume. Business that should have been spread over a period of six months is being crowded into two.

Dress goods and suitings for women's spring wear should have been bought long ago. Business is just being placed with manufacturers in many cases, and, as delivery must be made in time for these fabrics to be worn in the Easter parades, everything must be done in a rush.

A fair number of women's fabric mills are running day and night shifts and in isolated cases are working three shifts a day in order to make delivery in the necessary time. Will trading drop out of sight after the Easter season or will this improvement, in tone and interest carry on? These are the important questions for the trade to answer now.

Men's Wear Sales Expand

Practically the same thing is to be found in the men's wear section although to a smaller degree. Sales have expanded since the first of the year although not progressively. Demand is mainly for plain fabrics and sellers say that they have been able to dispose of stocks long inactive. Buyers are not so particular about the design as they are about prompt delivery in many instances.

Since the wool markets of the world have become stronger there is less price talk in the goods market although indications still are in favor of reductions when the heavyweight lines are opened within the next few weeks. If wools continue strong and sales of goods large, these revisions may disappoint clothiers and not be so large as expected.

Worsted Yarn Season Late

Quick Yarn Deliveries Are Wanted at the Last Minute

SALES worsted yarns do not reflect the improvement that has taken place in the goods markets yet. Men's wear and dress goods lines are selling actively, but weaving yarns have not improved to the same degree. Many manufacturers had yarns on order which they are now taking actively, but are not ready to place additional orders.

There has been more inquiry for men's wear mixes and for the popular counts being used by dress goods mills, but the change has not been uniform with all dealers and spinners, and the volume has not been so large as the goods betterment would have implied.

Rush Was Foreseen

Deliveries are wanted quickly in yarns to make it possible for weavers to make the rapid deliveries necessary if goods are to be sold for this spring season. Although mixtures are the only weaving yarns being taken by men's wear mills, spinners of these qualities point out that manufacturers are losing business by not having placed orders and getting yarns to make up goods in time. This condition was foreseen.

While large bathing-suit manufacturers here and there have covered, the majority have not bought yarns in quantity. This means that bulk of their purchasing must be done in a much shorter time this season than is usually the case. Knitters believe that they will do a large business in suits made from 64s grade yarns which are usually slub-dyed. Yet they have not been willing to go ahead and contract for a large volume of yarns knowing that once these are dyed the specifications cannot be changed should their customers demand different colors.

Spinners Not Stocking Yarns

Spinners have not been willing to make up large stocks of these dyed yarns, fearing that manufacturers would not operate extensively in them at the last minute and they would have this "frozen" yarn on their hands at the end of the spring season. The rush that is seen in woven goods and yarns going into them, will probably be repeated in bathing-suits later in the season.

Although the wool markets have strengthened, there is no evidence of it in sales yarns. The business passing is at prices which are under the generally accepted level. The larger the inquiry, the wider the range between the high and low priced spinner will be, the order finally being placed at prices that are prohibitive to most.

Silk Drop Slows Sales

Sharp Decline in Yokohama Makes Manufacturers Cautious

AN INCREASE in available stocks has weakened Yokohama's position and brought a decline in raw silk prices which has sent prices down 20 to 25c. in the New York market. The American importers offered resistance to the depression, but the drop was too acute, and they were compelled to revise their lists downward. The sharp decline had the same effect as a sharp incline upon the consuming industries; it made manufacturers doubtful and hesitant, and resulted in a general let-down of buying.

At moment of writing broadsilk mills were buying cautiously; there was no confidence at any end, and coverage was limited to immediate or nearby requirements. As usual the cut stimulated some speculative buying, but industry as a whole held off. No big pick-up in buying by weavers is expected until the primary market regains some measure of stability. Increased confidence among hosiery producers regarding their own market for finished goods was noted, and it stimulated buying at that end; these knitters are still slow to cover, however, and the principal mills do nothing more than sound out their raw material sources, in anticipation of later business. Broadsilk mills are believed to have fair stocks on hand for February consumption, and they refuse to commit themselves on March or April.

Blame Japanese Reelers

The Yokohama weakness is attributed to increased production; advices reaching New York state that silk reeled in January was 25% above expectations. There seems to be a tendency among the reelers to speed up production, and New York importers expect end-February stocks will be heavy. With the approach of March, bringing the general one-month closing of all filatures, the reelers are anxious to have stocks on hand to cover the non-production period. This policy is questionable on the face of it, as the whole purpose of the March shut-down was to reduce stocks to the point where Japan could begin feeding her surplus into the market. There is little prospect of an early price

rise in Yokohama, but New York importers hope for a steadier market within ten days.

Reports that silk shipments by the Canal route have exceeded rail shipments by 30% provoked much discussion, and the view taken in New York is that the Canal route will grow more popular with time. Several importers remarked this week that already they are bringing their raw silk almost 100% by the Canal route. This method of transportation is decidedly cheaper than rail, and the time differential, 30 against 20 days, is gradually being reduced.

◆Thrown Silk Off 20c.; Spun Yarn Steady

THE primary market drop, plus light demand sent thrown silk yarn prices sharply downward this week; certain numbers fell 20c. The decline spurred buying somewhat, but there was no rush to cover. Hosiery knitters placed moderate preliminary business; broadsilk mills eased off on contracts. Throwsters are going through a very lean period, and can move stocks only with great difficulty and considerable concessions. Fortunately yarn stocks in yarn mills are only moderate, and this has helped to ease the situation for the throwsters. They are now patiently awaiting a favorable turn.

Spinners as usual are in better position; yarn demand is steady, and some mills are selling ahead. One important firm placed considerable April business this week. Future call is chiefly for singles. Broadsilk manufacturers are buying doubles for immediate use, and are pressing spinners for delivery. Spun yarn seems fairly plentiful and spinners have little difficulty in meeting spot demand.

◆Keen Interest in Cantons

A SHARP increase in demand for plain cantons which with some houses has reached the proportions of a "boom," is the current feature of the broadsilk market. The call for black and navy cantons is well in excess of supply, and weavers are asking several weeks for deliveries. The call is chiefly from cutters, though there is also some interest manifested by piece goods retailers. Leading firms report that most of their plain cantons are going into the manufacture of redingote coats, which have fashion's approval for the coming season. The jump in canton demand came almost overnight, and at present canton sales are second to flat crepes in volume; canton percentages as regards total volume could not be learned, but the turnover is well in excess of last year.

Cantons normally begin to move early in January, and much of the business now coming in represents orders which were held up by the garment trade. Weavers expect the call for cantons to continue four to six weeks longer. Spring prints enjoy a fair demand, but there is no spirited buying as yet. Shantung movement also is hesitant, and there is more talk of shantung overproduction; rough goods stocks in weavers' hands are accumulating, which has influenced some of the large broadsilk houses to slacken their output. The market seems reconciled to the prospect of a miniature price war on shantungs. Although the season has not yet fully opened, prices tend downward, and early offerings are competitive.

Production Stresses Prints

Production at broadsilk mills is largely centered on spring print lines, and the stocks are growing, but not too fast. Weavers are hoping for an end-February mild spell to mark the real opening of print business. There is growing interest in the prospects for printed chiffons; leading houses have planned unusually varied offerings in the sheers, and look for good business at that end in April.

Excellent January for Rayon

Producers Debate Whether to Increase Yarn Output

THE cut in rayon yarn prices has proved a strong buying inducement, and most of the leading rayon producers did a very good January business. Several sales executives termed January "excellent" and one outstanding firm reported the best January turnover in three years. Weavers and knitters both are buying spiritedly; the bulk of demand falls as usual, in the 150s, but there is also a good call for the fine deniers. Producers are behind in deliveries of certain of the 150s, both high and low luster, and output of these numbers has been increased. Continuation of the present demand will compel the large producers to increase their production all along the line, it is believed, though it is unlikely any action of that kind would be taken before the end of February. Producers are running 60 to 75% for the most part, and they are reluctant to produce for stock, because of the possibility that the present brisk buying may suddenly fall off.

Manufacturers are still holding as closely as they can to spot coverage on yarn requirements. Little or no future business is placed. Producers are considerably encouraged by the pick-up in orders, but they are still in a watchful mood. Much of the business placed in January was hold-over; manufacturers had suspended buying, pending the price cut, so it is difficult to estimate the importance of the new spurt.

The news of the proposed addition to the cellulose acetate group of a plant which would have 2,500,000 lb. annual capacity, excited much interest in the market and raised the obvious question to to whether consumer demand would increase sufficiently to assimilate the increased output. It is significant that acetate yarn producers seem less concerned over the new entry into their ranks, than they were last year when several firms turned to acetate yarn production. There is a growing confidence as to the market possibilities for acetate, and a stronger belief that the producers themselves, by adequate promotion can find new outlets, rather than rely on competition among themselves.

Rayon Waste Quiet

There is moderate call for thread waste, and some inquiries regarding open waste are reported, but generally speaking, manufacturers are indifferent. Waste dealers have difficulty in moving stocks at list prices and are gradually yielding to pressure on that point, in order to effect turnover. There is no bona fide demand at any end, most orders being featured by sharp bargaining.

Hosiery Market Firming

Better Tone is Evident; Spring Underwear Steady

THERE is a slight but consistent strengthening perceptible in the hosiery market, more in women's full-fashioned than in half-hose. Full-fashioned, long the weaker of the two, shows signs of recuperation. It is not alone a matter of the impending price rise, though the prospects of such a development grow more likely each day, and one more sharp advance in raw silk would probably decide at least one of the major companies to increase prices; but it is also evident in the firmer attitude adopted by knitters as a whole. Jobbers and retailers are disposed to talk quality, and even to reject price appeal when it means buying inferior merchandise.

This trade-up tendency was a characteristic of business placed during the last ten days in full-fashioned; the pressure to clear distress merchandise has

slackened, and buying this week was comparatively steady. Full-fashioned producers say the improvement is "perceptible but not pronounced." Buying continues a strictly spot proposition, and orders are small, but there is a growing belief that the bottom has been reached as regards decline in either prices or sales. Numerous agents report January sales to be considerably above December.

Sample Fall Underwear

Announcements of 1931 fall underwear prices to date, indicate that levels will be 12 to 15% below last season; a number of important mills have yet to quote prices, but they are expected to fall in line. Production of samples of the new heavyweights is active, and inquiries are beginning to come in, but the mills do not look for any real buying for some weeks. The retailers are still taking heavyweights for spot delivery, and the season now closing has proved much better than was expected, thanks chiefly to the firm mill policy of curtailed output; volume was low all season, but prices were steady, permitting a fair margin. Balbriggans and other lightweights are in moderate demand; some balbriggan mills are selling into June. Spring underwear, especially cotton athletics and shorts are in steady call, and there is less emphasis on price.

Spring Sweaters Active

At the outerwear end, spring sweaters have begun to show activity, and fall lines have improved slightly. The general tone is better, and mill representatives believe the spring season will be good, though late. Agents are hoping for a spell of spring weather at the end of the month which, they say, would be a big help in spurring movement of current lines. Bathing-suit demand has eased slightly.

Pacific Mills Has Poor Year

Additional Financial Reports Show Many Suffered in 1930

AFTER all charges, including depreciation of $1,458,801 and an inventory markdown of $826,219, Pacific Mills, for the year ended Dec. 31, 1930, reports a net loss of $2,417,886. In 1929 there was a net profit of $1,031,168 after all charges, and in 1928 a net loss of $600,751.

In his report to stockholders, Treasurer A. E. Colby said in part:

"Net sales charged, due in part to lower values of merchandise, decreased $10,760,101, or 22.60%, while unit volume charged decreased approximately 11.50%. The inventory shows a further reduction of $2,015,134, reflecting lower values of cotton, wool, rayon and manufactured cloths, as well as further reduction in units.

"Surplus account decreased $2,274,409 during the year, while net quick assets decreased $1,354,685 and now stand at $16,473,057, with a ratio of 26.26 to 1. As in the past, the proportionate part of the note discount was charged against operations for the year though the total amount was originally deducted from surplus. This item, together with the fact that the amount charged for depreciation was not fully spent on plant, plus sale of land, etc., accounts for most of the difference in shrinkage of quick assets as against the losses shown.

"On Aug. 1, 1930, company purchased or called the balance of the five-year 5½% notes and for the first time in many years is out of debt. Including sundry accounts payable, indebtedness retired for the year amounts to $8,231,364.

"It is the policy of the company to dispose of such real estate and sundry assets as are not needed for manufacturing purposes and during the year $85,050 was received from this source. This sum was deducted from plant and sundry assets and not included in profit and loss results for the year.

"Progressively lower levels for raw materials throughout the year, as well as general business depression and intense competition, affected seriously our ability to sell our products in volume or at profitable prices, though further encouraging economies have been effected. The very low levels now prevailing on raw materials which should insure the industry from any appreciable further losses in values, and the growing tendency on the part of the industry to regulate production to sales, are encouraging items as to the future."

Income account for the year ended Dec. 31, 1930, compares as follows:

	1930	1929	1928
Net sales	$36,843,572	$47,603,674	$44,120,650
Cost of goods sold	36,630,687	43,924,397	41,943,607
Net op. prof.	212,885	3,679,277	2,177,043
Plant deprec.	1,458,801	1,440,340	1,427,676
Inventory mark down	826,219	600,511	465,808
Net int. charges	†41,296	325,782	582,337
Amort. of disc. and ret. of term nts.	141,490	121,394	119,916
Other charges	245,556	160,082	182,057
Net loss for year	2,417,886	*1,031,168	600,751

*Profit. †Interest income exceeds interest charges by this amount.

Real Silk Net Declines

Net profits for 1930 of the Real Silk Hosiery Co. will be equivalent to between $4 and $5 per common share,

MILL STATEMENTS

Name and Address of Company	Line of Business	Fiscal Year	Assets						Total	Liabilities and Capital		
			Cash and Debts Receivable	Raw Materials, Mdse., Etc.	Total Quick Assets	Real Estate, Buildings and Machinery	Miscellaneous Amount	Miscellaneous Description		Accounts Payable, Floating and Funded Debt	Capital Stock	Surplus, Profit and Loss Reserves, Etc.
Arlington Mills Lawrence, Mass.	Wool	Nov. 29, 1930 Nov. 29, 1929	$2,252,832 3,077,232	$4,519,595 6,504,089	$6,772,427 9,581,321	$14,658,924 14,388,805	$409,586 227,916	Miscellaneous Prepaid	$21,840,937 24,198,042	$1,589,379 2,501,408	$12,000,000 12,000,000	$8,251,558 9,696,634
Charlton Mills Fall River, Mass.	Cotton	Dec. 27, 1930 Dec. 28, 1929	244,747 276,016	495,866 524,158	740,280 800,174	749,280 773,189	.....	.....	1,489,893 1,573,363	50,000 50,000	1,200,000 1,200,000	239,893 323,363
Cornell Mills Fall River, Mass.	Cotton	Dec. 31, 1930 Dec. 31, 1929	38,008 76,482	60,244 129,384	98,252 205,866	782,842 800,000	104,393 70,470	Profit and loss Profit and loss	985,487 1,076,336	10,486 101,336	594,001 600,000	381,000 375,000
Laurel Lake Mills Fall River, Mass.	Cotton	Dec. 27, 1930 Dec. 28, 1929	17,901 27,434	204,282 210,760	222,183 238,194	991,522 991,867	.....	.....	1,213,705 1,230,061	150,066 151,000	900,000 900,000	163,639 179,061
Barnard Mfg. Co. Fall River, Mass.	Cotton	Jan. 3, 1931 Dec. 28, 1929	.....	.....	264,865 375,517	988,186 1,558,459	(1)145,342 92,988	Miscellaneous Profit and loss	1,398,393 2,026,964	148,393 183,495	1,250,000 1,250,000	 593,469
Pocasset Mfg. Co. Fall River, Mass.	Cotton	Dec. 31, 1930 Dec. 31, 1929	40,436 78,700	.....	40,436 78,700	571,366 746,486	70,000 70,000	Securities Securities	681,800 895,186	40,755 177,665	1,200,000 1,200,000	(2)558,955 (2)482,479
Sagamore Mfg. Co. Fall River, Mass.	Cotton	Dec. 27, 1930 Dec. 28, 1929	 779,231	 267,767	1,250,577 1,046,998	3,639,607 3,539,960	762,599 773,690	Securities Securities	5,652,783 5,360,648	879,575 392,158	3,000,000 3,000,000	1,773,208 1,968,490

(1) Includes Profit and Loss item of $143,599. (2) Deficit.

as against $9.29 on each of the 200,000 common shares in 1929, according to Chicago reports. Official figures are to be released shortly.

It is understood the company's 1930 sales were the largest in its history, but that because of the declining market in silk prices, the net profit ratio to sales was not maintained.

Munsingwear Net $475,761

Munsingwear, Inc., reports for the year ended Dec. 31, 1930, net income of $475,761 after all charges including Federal taxes and dividends on preferred stocks of subsidiary corporations. This is equivalent to $2.64 per share on 180,000 shares of capital stock now outstanding. This compares with net profits of $1,548,803 or $7.74 per share on 200,000 shares of capital stock for the year ended Dec. 31, 1929.

Net sales for the year ended Dec. 31, 1930, amounted to $11,750,985, as compared with $15,067,130 for the year ended Dec. 31, 1929.

William Whitman Loss

For the year ended Dec. 31, 1930, William Whitman Co. and its subsidiaries lost $611,539, as compared with a rather small loss for 1929 and earnings of approximately $179,000 in 1928.

The loss noted above for the year was brought about by reduced activity, inventory losses and mark-offs, all inventories being taken at cost or market, whichever was lower. The company has set up adequate reserves on doubtful items or anticipated losses.

The company and its subsidiaries, however, are "in excellent financial condition to await the return of normal times," according to Mr. Whitman, who states that he looks for an improvement in the latter half of the year.

Boott Mills Loss

For the year ended Dec. 27, 1930, Boott Mills, cotton goods, Lowell, Mass., showed a loss of $459,563 after fully writing off goods to market and establishing additional reserve against future inventory fluctuations. This is the first loss in the history of the present corporation which was formed in 1905. In 1929 there was a profit before depreciation (company has not been making charges to this account since its depreciation reserve is larger than book value of the physical property) of $155,763, and in 1928 a profit of $178,241.

Harmony Mills Loss

Harmony Mills, Cohoes, N. Y., reports for 1930 calendar year net loss of $837,996 after all charges for interest and taxes, also after a depreciation allowance of $100,000 and inventory adjustments at the end of the year of $367,883. In 1929 there was a net profit of $28,779 after depreciation and in 1928 a net profit of $109,069. Sales for 1930 were $1,796,190 against $3,656,495 in 1929. Current assets on Dec. 31, 1930 totaled $1,506,640 and current liabilities $959,840, making net working capital of $546,800, as compared with $1,347,855 a year before.

Old Colony Cuts Deficit

The Old Colony Silk Mills Corp., New Bedford, Mass, shows a profit of $11,923 for the fiscal year ending Dec. 31, 1930, it was reported to stockholders at the annual meeting. This total was reached after $24,000 deduction for depreciation. The profit for the year reduces the deficit previously carried to $103,331.

Abbott P. Smith presided at the meeting, with less than a dozen in attendance. Proxies accounting for 2,980 shares voted, with 413 voting in person.

Officers reelected for the coming year were: Directors, Latimer W. Ballou, Edward H. Cook, Thomas F. Glennon, Frederic W. Howe, Joseph T. Kenney, and Abbott P. Smith; clerk and treasurer, Earl R. W. Bates.

Mock Judson Net Jumps

A remarkable showing, in view of the business depression, is disclosed by Mock Judson, Voehringer Co., Inc., manufacturers of women's hosiery, for year ended Dec. 31, 1930, which firm reports net profit of $236,001 after charges and taxes, equivalent, after 7% preferred dividends, to $1.66 a share on 100,000 no par shares of common stock. This compared with $52,504, or $4.51 a share on common in 1929.

Bristol Par Value Reduced

At a special meeting of stockholders of the Bristol Mfg. Co., New Bedford, Mass., the par value of shares was reduced from $100 to $25, decreasing the total capitalization from $1,000,000 to $250,000. No cash payment is to be made, and no announcement has been given out as to the reason for the reduction in capital. The controlling interest in the corporation is held by Jerome A. Newman, who purchased the majority of the stock at $39 per share.

No Receiver for Pelzer and Tucapau

Judge Thomas S. Sease of the Court of Common Pleas, Spartanburg, S. C., has filed an order refusing to appoint a receiver for the Pelzer (S. C.) Mfg. Co., Tucapau (S. C.) Mfg. Co. and New England Southern Corp., as applied for in a suit brought by Ernest Platten and others representing 2% of the holders of Pelzer company notes.

Nyanza Mills, Woonsocket, R. I., reports for the year ended Jan. 3, 1931, net loss including inventory markdown but before depreciation of $104,819, compared with loss in 1929 after depreciation of $11,537. Balance sheet as of Jan. 3, 1931, shows current assets of $676,376 and current liabilities of $365,077, leaving working capital of $311,299.

Boston Stock Auctions

The following sales of textile shares were made at the Boston Wednesday's auctions on Feb. 4:

Shares	Mill	Par	Price	Change
55	Associated Textile..	...	35–36½	...
11	Pepperell.....	100	78	—2½
5	Naumkeag.....	100	84	....
71	Total			

The following sales of textile shares were made at Wednesday's auctions, Feb. 11:

Shrs.	Mill	Price	Change
60	Associated Textile.....	36½	...
210	Wamsutta	10¼	...
21	Berkshire, Com.....	8	+½
18	Border City	3½	...
309	Total		

Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended Feb 10:

	High	Low	Last Sale	Net Chge.
Adams Millis.....	24	24	24	...
American Woolen.....	10⅛	8½	10	+1⅛
American Woolen, pfd....	34¼	27⅝	33¼	+1⅝
*Assoc. Rayon, pfd.....	58	48½	58	+7½
Belding-Hemingway	3⅞	3⅜	3⅞	+⅛
*Bleumenthal.....	13	12½	13	+⅜
Cannon Mills.....	20⅜	19½	20	+½
Century ribbon.....	5	3½	4⅛	+1⅛
Collins & Aikman.....	11⅛	10⅜	11⅛	—⅛
Consolidated Textile.....	⅜	⅜	⅜	+⅛
*Courtaulds, Ltd.....	7½	7¼	7½	—⅛
Duplan Silk.....	14⅜	14⅛	14⅜	+1
Gotham Hosiery.....	7⅜	7⅛	7⅜	+⅛
Industrial Rayon.....	67	45	65	+19⅜
Kayser, Julius.....	18⅛	17	18	+1
Kendall, pfd.....	31	31	31	+5⅛
Mallinson.....	3	3	3	...
Mohawk Carpet.....	17½	16⅛	17½	+1⅛
Munsingwear.....	31⅛	29⅜	31	+1
Pacific Mills.....	19	18½	19	+⅛
*Propper-McCallum.....	5	5	5	+2
Real Silk Hosiery.....	30½	27½	30½	+3⅛
*Tubize Chat B.....	4⅛	4⅛	4⅛	—⅛
United Piece Dye Works..	27¼	25⅞	26	—1⅛

*Listed on Curb.

Textile Calendar

Knitted Underwear Standards Conference, Bureau of Standards, Department of Commerce, Washington, D. C., Feb. 19, 1931.

International Association of Garment Manufacturers, 24th Annual Convention and 18th Annual Textile and Machinery Exposition, Hotel Stevens, Chicago, March 3 to 5, 1931.

Export Managers Club of New York, Annual Get-together Meeting, Hotel Pennsylvania, New York, March 3, 1931.

The Textile Forum, N.A.C.M., overseers of finishing, Boston (Mass.) Chamber of Commerce, March 10, 1931.

Textile Operating Executives of Georgia, Spring Meeting, Georgia School of Technology, Atlanta, Ga., March 13, 1931. (Tentative).

National Association of Waste Material Dealers, Eighteenth Annual Meeting, Congress Hotel, Chicago, March 16 to 18, 1931.

Wool Blanket Manufacturers Association, Quarterly Meeting, Hotel Pennsylvania, New York, March 27, 1931.

Knitting Arts Exhibition, Commercial Museum, Philadelphia, April 13 to 17, 1931.

American Cotton Manufacturers Association, Thirty-fifth Annual Convention, Bon Air-Vanderbilt Hotel, Augusta, Ga., April 23 to 25, 1931.

Exposition of Chemical Industries, Grand Central Palace, New York, May 4 to 9, 1931.

QUOTATIONS

at close of business, Feb. 11, 1931
Prices cover average qualities unless otherwise stated

Cotton Goods

	Feb. 10	Feb. 3	Feb. 11 1930
PRINT CLOTHS			
27-in., 64x60, 7.60	3⅛–3¼c.	3⅛c.	4⅛c.
38½-in., 64x60, 5.35	5¼c.	5⅛–5¼c.	6⅞–6¾c.
39-in., 68x72, 4.75	5¼–6c.	5⅛–6c.	7⅛–7½c.
39-in., 72x76, 4.25	6¼c.	6¼c.	8¼c.
39-in., 80x80, 4.00	7¼–7½c.	7¼–8c.	9c.
BROWN SHEETINGS			
36-in., 56x60, 4.00	5¼c.	5¼c.	7⅛–7½c.
36-in., 48x48, 3.00	6¼c.	6¼c.	9¼c.
37-in., 48x48, 4.00	5¼c.	5¼c.	7c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70	5¼c.	5⅛–6c.	7½–7⅝c.
36½-in., 64x60, 5.75	5c.	5c.	6¼c.
MISCELLANEOUS			
Drills, 37-in., 3 yd.	6¼c.	6¼c.	9¼c.
Denims, 2.20	11¼c.	11¼c.	15c.
Tickings, 8 oz.	15 c.	15 c.	19¼c.
Standard prints	7¼c.	7¼c.	9¼c.
Eastern staple ginghams, 27-in.	8 c.	8 c.	10 c.

Cotton Waste

Peeler comber	8½— 8¾
Peeler strips	7½— 8
Sak. comber	7¾— 7½
Choice willowed fly	3¾— 4¼
Choice willowed picker	3 — 4
Sak. strips	10¼—10½
Linters (mill run)	2½— 3¼
White spooler (single)	6¼— 7

Cotton Yarn

CARDED (Average Quality)

Double Carded 2c.—4c. higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s	$0.18½	22s	$0.23
10s	– .19	24s	– .24
12s	– .19½	26s	– .25
16s	– .20½	30s	– .26
20s	.21 – .21½	40s ex. qual.	– .37

TWO-PLY SKEINS AND TUBES

8s-2	$0.18½	26s-2	$0.25
10s-2	– .19	30s-2	.26 – .26½
12s-2	– .19½	36s-2	– .32
14s-2	– .20	40s-2	– .34
16s-2	– .20½	40s-hi.brk.	– .37
20s-2	– .21½	50s-2	– .41
24s-2	– .24	60s-2	– .51

SINGLE WARPS

10s	$0.19	24s	$0.24 – .24½
12s	– .19½	26s	.25 – .25½
14s	– .20	30s	.26 – .27
16s	.20½ – .21	40s.ex.qual	.37 – .38
20s	.21½ – .22		

TWO-PLY WARPS

8s-2	$0.19	24s-2	$0.24 – .24½
10s-2	– .19½	26s-2	.25 – .25½
12s-2	– .20	30s-2	.26 – .27
14s-2	– .20½	40s-2 ordin.	– .35
16s-2	– .21	50s-2	.42 – .43
20s-2	.21½ – .21	60s-2	.52 – .53

8s-3 and 4-ply skeins and tubes; tinged, 17-17½; white, 18½; waste, 16-16½

HOSIERY CONES (Frame Spun)

8s	$0.18½	22s	21½ $0.22
10s	.18½ – .19	24s	22½ – .23
12s	19 – .19½	26s	23 – .23½
14s	19½ – .20	30s tying	– .25½
16s	20 – .20½	30s reg	– .27
18s	20½ – .21	30s ex.qual.	.29 – .29½
20s	21 – .21½	40s	.34 – .35

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

20s-2	$0.34 – .35	60s-2	$0.54 – .55
30s-2	.38 – .39	70s-2	.64 – .65
36s-2	.40 – .41	80s-2	.74 – .76
40s-2	.42 – .43	90s-2	.90 – .93
50s-2	.47 – .48	100s-2	1.10 – 1.15

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2	$0.35	60s-2	$0.55
30s-2	– .40	70s-2	– .65
36s-2	– .41	80s-2	.75 – .77
40s-2	– .43	90s-2	.92 – .95
50s-2	– .48	100s-2	1.12 – 1.17

SINGLES

12s	–$0.27½	30s	–$0.37½
14s	– .28	38s	– .40
16s	– .28½	40s	– .41
18s	– .29	50s	– .47
20s	– .30	60s	– .54
24s	– .32½	70s	– .63
28s	– .36	80s	– .73

MERCERIZED CONES—(Combed, Ungassed)

26s-2	50–$0.52	90s-2	–$1.29
30s-2	52 – .54	100s-2	–1.59
36s-2	55 – .57	120s-2	–1.99
40s-2	58 – .60	30s	– .63
45s-2	60 – .62	40s	– .68
50s-2	62 – .64	50s	– .75
60s-2	70 – .72	60s	– .83
70s-2	82 – .84	70s	– .95
80s-2	94 – .96	80s	–1.17

Cotton Prices and Statistics

FLUCTUATIONS OF FUTURES

	Closed Feb. 4	For Week High	For Week Low	Closed Feb. 10	Net Chge.
February	10.43	10.68	10.43	10.68	+.25
March	10.55	10.81	10.42	10.80	+.25
April	10.68	10.93	10.68	10.93	+.25
May	10.82	11.08	10.69	11.06	+.24
June	10.94	11.18	10.94	11.18	+.24
July	11.06	11.33	10.93	11.31	+.25
August	11.19	11.45	11.19	11.45	+.26
September	11.19	11.49	11.19	11.49	+.30
October	11.32	11.60	11.15	11.59	+.27
November	11.40	11.69	11.40	11.69	+.29
December	11.49	11.79	11.33	11.79	+.30
January	11.57	11.87	11.42	11.86	+.29

SPOT FLUCTUATIONS FOR WEEK

(Middling)

	New York	New Orleans	Liverpool
Friday, Feb. 6	10.75	10.38	5.72
Saturday, Feb. 7	10.70	10.38	5.74
Monday, Feb. 9	10.70	10.38	5.72
Tuesday, Feb. 10	10.90	10.60	5.77
Wednesday, Feb. 11	11.00	10.67	5.91
Thursday, Feb. 12		Holiday	

FOREIGN COTTONS

Egyptian Cotton

Alexandria Exchange, Feb. 10	Change
March Sak 17.34	+0.88
February uppers 12.13	+0.78

Feb.-Mar. Shipment c. i. f. Boston. (Tariff not included)

Fully good fair Sak	19.95
Fully good fair to good Uppers	15.00

(By Anderson, Clayton & Co.)

Foreign cottons F. O. B. New York, Cents	
Peruvian Tanguis Strict Middling	19½
Peruvian Pima No. 1	19½
Peruvian Moderate Rough	16
Peruvian Full Rough	21
China Tientsin No. 1	9½
India Rough	7 to 10
India Smooth	7 to 10

(By Gerald G. Loeb, New York.)

BASIS MIDDLING

	Saturday, Feb. 7	Saturday, Jan. 31
10 markets average	9.93	9.66
Memphis	9.35	9.15

PREMIUM STAPLES

First Sales from Factors Tables at Memphis

Grade Strict Middling	Prices Nominal
1⅛-in	11.80—12.10c.
1 3/16-in	13.65—13.85c.
1¼-in	18.35—18.60c.

CURRENT SALES

	For Week	Prev. Week	Week Before
Memphis total	11,816	15,402	12,679
F.o.b. included in total	9,221	10,428	9,349
10 markets	57,360	63,394	71,402

MEMPHIS RECEIPTS, SHIPMENTS, ETC.

	For Week	Last Year	Year Before
Net receipts	13,298	11,585	16,286
Gross receipts	33,818	33,648	46,884
Total since Aug. 1, net	573,065	806,574	686,676
Shipments	37,980	49,112	58,864
Total since Aug. 1	840,161	1,215,661	1,167,313
Total stock	364,788	407,806	270,596
Decrease for week	4,162	25,464	11,980
Unsold stock in hands of Memphis factors	59,082	54,175	.....
Decrease for week	5,502	3,447	.....

AVERAGE PRICE FEB.-MAR. SHIPMENT HARD WESTERN COTTON

F. o. b. New England

	Middling	St. Middling
1 1/16 in	12¼–12½c.	12½–12¾c.
1⅛ in	12¾–13 c.	13½–13⅝c.
1 3/16 in	14½–15 c.	15½–16 c.
1¼ in	19 –21c.	20 –22c.

Basis on New York, March 10.80c.

SPOT FLUCTUATIONS AND STOCKS

Markets	Middling Feb. 3	Middling Feb. 10	Sales	Stocks This Week	Stocks Last Year
Galveston	10.25	10.65	3,927	638,805	400,462
New Orleans	10.20	10.60	9,469	777,357	502,577
Mobile	9.55	10.00	1,676	206,496	35,897
Savannah	9.87	10.30	2,068	332,195	65,675
Norfolk	10.00	10.38	1,609	95,328	70,645
New York	10.50	10.90	.....	227,686	100,178
Augusta	9.69	10.19	2,510	114,623	96,687
Memphis	9.15	9.55	15,950	359,270	405,557
St. Louis	9.10	9.40	.....	16,380	13,799
Houston	10.15	10.55	15,725	1,419,166	1,021,701
Dallas	9.65	10.05	19,043	19,141	13,297

DIFFERENCES ON AND OFF MIDDLING

WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M. F	.75†	1.00†	.85†	.75†	0.87†
S. G. M	.60†	.75†	.75†	.63†	.70†
G. M	.50†	.50†	.60†	.50†	.51†
S. M	.35†	.25†	.35†	.25†	.30†
S. L. M	.60*	.75*	.65*	.50*	.64*
L. M	1.35*	1.50*	1.50*	2.25*	1.43*
S. G. O.**	2.25*	1.75*	2.50*	3.50*	2.28*
G. O	3.25*	2.00*	3.50*	4.50*	3.06*

YELLOW TINGED

G. M	0.50*	0.75*	0.50*	0.50*	0.58*
S. M	1.00*	1.25*	1.00*	1.00*	1.03*
M.**	1.75*	1.50*	1.50*	1.50*	1.58*
S. L. M	2.50*	1.75*	2.25*	2.25*	2.20*
L. M.**	3.50*	2.00*	3.00*	3.00*	2.97*

YELLOW STAINED

G. M	1.50*	1.75*	1.50*	1.50*	1.55
S. M.**	2.25*	2.00*	2.50*	2.50*	2.30
M.**	3.00*	2.00*	3.50*	3.50*	3.10

BLUE STAINED

G. M.**	1.75*	1.50*	1.75*	1.75*	1.63*
S. M.**	2.25*	1.75*	2.75*	2.75*	2.33*
M.**	3.00*	2.25*	3.75*	3.75*	3.10*

**Grades not deliverable on contract. †On Middling *Off Middling.

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne..	$0.29 –$0.30	¾ blood.....	$0.26 –$0.27
Fine clthg ..	.23 – .24	½ blood.....	.25 – .26
¼ blood.....	.28 – .29		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.63 –$0.65
California, Northern	.58 – .60

PULLED—EASTERN (CLEAN BASIS)

A.A.	$0.68 –$0.70	B-Super...	$0.40 –$0.45
A-Super....	.52 – .55	C-Super...	.38 – .40

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Staple fine	$0.65 –$0.68
Staple ½ bld.	.61 – .63
Fine and fine medium	.60 – .62
¾ blood	.53 – .55
½ blood	.48 – .50

MOHAIR—DOMESTIC

Best carding	$0.30 –$0.33
Best combing	.45 – .48

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.15 –$0.18
Cape firsts	.15 – .18

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
70s	$0.50 –$0.52
64s	.40 – .42
58s-60s	.38 – .40
(IN GREASE)	
Montevideo:	
58s-60s	$0.18 –$0.19
56s	.17 – .18
50s	.16 – .17
Buenos Aires:	
4s, 40-44s	$0.13 –$0.14
5s, 36-40s	.11 – .12

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo	$0.20 –$0.22
China: Combing No. 1	.11 – .12
China Filling Fleece	.10 – .11
Szechuen ass't.	.11 – .12
Cordova	.11 – .12
Scotch black face	.13 – .14
East India: Kandahar	.18 – .19
Vican'r	.22 – .24
Joria	.21 – .22

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.80 –0.82½
2-24s 40s	.90 – .92½
2-26s 44s	.92½ – .95
2-28s 46s	1.00 –1.02½
2-30s 48s	1.05 –1.07½
2-32s 50s	1.10 –1.12½

(Single yarns 5c. less than above)

2-36s, 58s	$1.30 –1.32½
2-40s, 60s	1.37½–1.40
2-40s, 64s	1.42½–1.45
2-50s, 66s	1.62½–1.65
2-60s, 70s	1.95 –1.97½

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.80 –0.82½
2-20s, 48s in oil	.87½– .90
2-20s, 50s in oil	88 – .92½
2-20s, 56s in oil	.98 –1.02½
2-20s, 60s in oil	1.17½–1.20
2-20s, 64s in oil	–1.27½
1-15s, 46s dyed	1.00 –1.02½
1-15s, 48s dyed	1.02½–1.05
1-15s, 50s dyed	1.05 –1.07½

(Oil yarns 17½c. less)

FRENCH SYSTEM

1-20s, 58s	$1.10 –1.12½
1-20s, 60s	1.15 –1.17½
1-18s, 64s, dyed	1.35 –1.40
1-26s, 64s	1.20 –1.22½
1-30s, 60s, Warp	1.22½–1.25
1-30s, 64s, Warp	1.25 –1.27½
2-30s, 64s, Fancy mixes	1.55 –1.57½
2-40s, 64s, Zephyrs	1.40 –1.42½
1-50s, 66s	1.55 –1.60
2-50s, 66s	1.72½–1.75
1-60s, 70s	1.90 –1.92½
2-60s, 70s	2.00 –2.05

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$1.00 –1.02½
1-40s, 50-50-60s on cops	1.15 –1.17½
1-40s, 50-50-64s on cops	1.17½–1.20
1-40s, 50-50-64s Australian cops	1.20 –1.25

Underwear mixes, 3c. additional.
Solid color, 35c. additional.

◆

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.90–$0.92
Half-blood (60-62s)	.83– .88
High ¾ blood (58s)	.80– .82
Aver. ¾ blood (56s)	.75– .78
Low ¾ blood	.70– .73
High ½ blood (50s)	.65– .68
46s S. A. and N. Z.	.60– .63
44s S. A. and N. Z.	.58– .60
40s S. A. and N. Z.	.56– .58

TOPS—BRADFORD, ENG. (JAN. 30)

Fine (70s)	24½d	¾ bld. (56s)	15 d
Fine (64s)	22 d	½ bld. (50s)	12 d
½ bld. (60s)	20 d	Cross-bred (46s)	10 d
¾ bld. low (58s)	17 d		

NOILS—BOSTON

Fine	$0.43–$0.45	High ½ bld.	$0.31–$0.33
Half-bld.	.38– .42	Low noils	.31– .33
Aver. ¾ bld.	.33– .35	Medium colored	.25– .28
Fine colored.	.32– .35		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.68 –$0.70
Lap, fine colored	.48 – .52
Hard ends, fine white	.52 – .55
Hard ends, ½ blood white	.35 – .38
Hard ends, fine colored	.25 – .27
Hard ends, medium colored	.18 – .20
Card, fine white	.23 – .27
Burr, fine Carbonizing	.30 – .33

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, Coarse Light	$0.04½–$0.05½
Merinos, Fine Dark	.04 – .04½
Merinos, Fine Light	.11 – .12
Serges, Blue	.06 – .06½
Serges, Black	.06 – .06½
Serges, Red	.08 – .09
Knit, White	.23 – .24
Knit, red	.10½– .11½
Knit, Light Hoods	.11½– .12½
Worsted, Light	.05½– .06
Worsted, Blue	.06½– .07
Worsted, Black	.06½– .07

Silk Yarns

THROWN SILK (60 day basis)

	Nominal
Japan organzine, 2 thd. spec. gd. XX. sk. 85%	$4.25
Japan organzine, 2 thd. sp. crack. sk. 81%	3.75
Japan crepe, 3 thd. gd. XX bob. 83%	4.00
Japan crepe, 3 thd. sp. crack. bob. 81%	3.85
Japan crepe, 4 thd. crack bobbins, 78%	3.55
Japan grenadine, 4 thd. sp. grand singles, 87%	6.00
Japan grenadine 4 thd. 85%	5.70
Japan grenadine 3 thd. 90%	7.00
Canton crepe, 3 and 4 thd. ns. 14/16 on bobbins	2.75
Hosiery tram, 3 thd. Japan 90%	5.05
Hosiery tram, 5 thd. Japan, 85%	4.10
Hosiery tram, crack XX 78%	3.25

SPUN SILK YARNS (Terms: net 30)

40/2	$3.15	60/2	$3.35
50/2	3.25	62/1	2.35

Raw Silk

(60 day basis)
Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 86/88%	$3.60	$3.90	$2.95
Special Grand, 85%	3.15	2.75	2.80
Grand XX, 83%	2.95	2.70	2.75
Special Crack, 81%	2.75	2.60	2.65
Crack XX, 78%	2.70	2.55	2.60
Extra Extra, 73%	2.55	....	....
Best Extra, 68%	2.50	....	....

Canton filature, new style, 14/16	$1.75
Canton filature, new style, 20/22	1.55
Tussah filature, 8 cocoon	1.15

NATIONAL RAW SILK EXCHANGE

	Close Feb. 2	For the Week High	For the Week Low	Close Feb. 9	Net Chge.
February	2.57	2.65	2.47	2.52	—.05
March	2.57	2.64	2.45	2.48	—.09
April	2.52	2.63	2.44	2.50	—.02
May	2.52	2.59	2.40	2.44	—.08
June	2.48	2.55	2.38	2.41	—.07
July	2.48	2.52	2.37	2.38	—.10
August	2.48	2.51	2.36	2.38	—.10
September	2.48	2.51	2.36	2.38	—.10

Total contracts, 1,23 . Total number of bales 12,350. Total approximate value $34.580. Trading unit Crack XX 13/15 white, 78%.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament		First	Second
50	14	.....	$2.15	$1.95
75	18–30	.....	1.35	1.25
100	18–40	.....	1.10	1.00
125	36–50	.....	1.00	.90
150	30	.....	.79	.67
150	40	.....	.75	.72
150	60	.....	.85	.82
150	75–90	.....	.85	.82
170	24–27	.....	.75	.72
170	60	.....	.85	.82
200	30	.....	.75	.72
200	35–42	.....	.75	.72
300	42–62	.....	.63	.60
450	54–60	.....	.63	.60
600	72–96	.....	.63	.60
900	100–144	.....	.63	.60

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.35	$1.25	150	$0.75	$0.72
100	1.05	.95	175	.75	.72
125	.95	.85			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	65	45	$2.00
25	24	2.85	80	60	1.70
30	24	2.60	100	75	1.35
40	30	2.40	120	90	1.22
52	30	2.20	150	112	1.10
			180	135	.97

ACETATE PROCESS

Denier	Price	Denier	Price
45	$2.25 2.75	120	$1.90
55	2.05–2.55	140	1.30
65	2.45	150	1.40–1.85
75	1.80–2.70	200	1.55
100	1.65–2.45	300	1.50

Rayon Waste

Prices Nominal

Open bleached waste	–$0.13
Open unbleached waste	– .11
Bleached thread waste (mfs.)	– .09
Bleached thread waste (misc.)	.05– .07
Colored thread waste	...– .04
Colored clips	...– .04

CONVERTED RAYON WASTE

Bleached tops	$0.30
Unbleached tops	.27
Bleached noils	.10
Bleached garnetts	.13
Unbleached garnetts	.14
Colored garnetts	.12

Silk Waste

Kibizzo Kakai Grand XX	$0.54
Kibizzo Kakai Triple Extra	.48
Frison Grand Double	.52½
Pierced Cocoons	.53

South Carolina Legislation

The measure recently introduced in the South Carolina legislature which would prohibit the employment of women and minors under 18 years of age in textile plants between the hours of 7 p.m. and 6 a.m., after March 31, 1931, has been withdrawn upon motion of its authors. Vigorous objection to this bill was voiced in the committee hearing by certain manufacturers and also by spokesmen for labor interests.

Public opinion in South Carolina evidently has not reached the stage where this type of regulatory legislation is considered advisable.

The committee reported favorably on the Godfrey bill to limit the number of looms assigned to each operative. (Important features of this measure were published in TEXTILE WORLD, Jan. 31).

Two other bills which have little chance of becoming law were: (1) McDonald bill requiring "any person, firm or corporation operating textile manufacturing plants to give 30 days notice before reducing time of operation or of closing such plants"; and (2) Godfrey bill which would make it unlawful for any concern to discharge any employee for joining the American Federation of Labor or "any organization associated therewith."

Single-Apron Stock Dryer

(Continued from page 41)

cording to his requirements without the necessity of stopping the machine to shift belts or change gears.

The dryer framework is assembled from standardized units or sections, built up of full-weight structural steel, electrically welded and riveted, and permitting of indefinite expansion. The housing, which consists of metal-clad panels filled with improved insulation 2 in. thick, is so constructed as to eliminate continuous through-metal contact between the inside and outside sheet-steel coverings. The outside framework members are insulated against the metal panels to avoid air leakage and heat loss at the panel joints. Each and every panel is easily removable from the framework, permitting complete access to the interior of the dryer.

The dryer is furnished for high- or low-pressure steam and with either double pipe coil or extended-surface copper heaters. Since it is motorized and all transmission is self-contained and properly shielded, the dryer is free from pulleys or belts overhanging the line of the housing, thus reducing floor-space requirements and eliminating extra safety guards. Anti-friction bearings are used, and lubrication is provided through Alemite fittings.

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended Jan. 31, based upon data compiled by the Market News Service of the Bureau of Agricultural Economics, Department of Agriculture, follow:

	Week Ended Jan. 31	Total to Date 1931	Total to Date 1930
Domestic	785,000	4,253,000	7,660,000
Foreign	1,694,000	6,228,000	9,420,000
Total	2,479,000	10,481,000	17,080,000
IMPORTS AT PRINCIPAL PORTS			
Boston	1,694,000	6,228,000	9,420,000
Philadelphia	296,000	2,968,000	11,141,000
New York	1,526,000	4,867,000	6,209,000
Total	3,516,000	14,063,000	26,770,000

Revised Estimate Places 1930 World Rayon Output at 416,775,000 Lb.

Rayon production figures are a perishable commodity. In the Annual Review and Forecast Number of TEXTILE WORLD, our Manchester (Eng.) rayon correspondent estimated 1930 world output of synthetic fibers at 426,700,000 lb. On the basis of further information just received, he revises this estimate downward, and places the total at 416,775,000 lb. His figures, by countries, are:

Austria	1,400,000
Belgium	10,450,000
Britain	48,825,000
Canada	5,350,000
Czechoslovakia	5,500,000
France	40,000,000
Germany	48,500,000
Holland	16,000,000
Hungary	550,000
Italy	65,150,000
Japan	35,500,000
Poland	5,750,000
Switzerland	10,650,000
United States	119,000,000
Miscellaneous	4,150,000
Total	416,775,000

By processes, he estimates:

Viscose	367,975,000
Acetate	28,700,000
Cupra	11,600,000
Nitro	8,500,000
	416,775,000

Waste Dealers to Hold Annual Meeting in Chicago, March 16-18

The Eighteenth Annual Convention of the National Association of Waste Material Dealers Inc., is to be held at the Congress Hotel, Chicago, Ill., on March 16, 17 and 18. On account of the many important problems before the industry at this time the Association will throw its business session open to the entire industry and many non-members are expected to attend.

Thomas Park Agent For High Point Yarn Mills

High Point Yarn Mills, Inc., and Pickett Cotton Mills, Inc., High Point, N. C., spinners of carded and combed yarns for the knitting and weaving trades, have appointed Thomas Park, Philadelphia, Pa., as sole selling agent in the territory north and west of the District of Columbia.

Army to Buy Cotton Textiles

Bids will be opened by the Philadelphia Quartermaster, U. S. Army, Feb. 24 to supply 275,588 yd., cotton khaki cloth, 36½ in.

Plans for U. S. Research Institute Meeting

Members of the U. S. Institute for Textile Research will attend a special meeting at the Chemists' Club, New York, Feb. 24 at 2 p.m., to act upon a proposed amendment to the by-laws increasing the number of members of the executive committee from six to 12, in order to make reasonably certain the attendance, at all meetings, of a representative group of the corporation membership.

The members will also have the privilege of attending, as observers, the meeting of the Board of Directors, to be held the same afternoon. In addition they have been invited to meet President S. W. Stratton at a reception at the club, 12:30 p.m., followed by luncheon.

Smith Carpet Auction Held

Alexander Smith & Sons Carpet Co., held an auction beginning Feb. 9, at the old Union League Club, New York and sales the first day resulted in a clearance of 12,325 bales valued at $461,324. Between 600 and 700 buyers from all sections of the country attended the opening sessions. This was the first auction held by the Smith concern since April 9, 1928. Prices were off from 10 to 20% compared with the last list issued by W. & J. Sloane, sole distributors for the Smith mills. Axminster prices were off 10% with the more popular patterns softening only 7 or 8%; velvets were off about 11% while the largest reductions were seen in the tapestry offerings.

Textile Executives of Georgia to Meet in March

Carding and spinning problems will be discussed at the next meeting of the Textile Operating Executives of Georgia, in Atlanta, Ga., Friday, March 13, according to a recent statement by Robert W. Philip, secretary of that organization. As usual, the meeting will be held at the Georgia School of Technology, beginning at 9:30 A.M. Although the above date is tentative, Mr. Philip stated that he was practically certain it would later be confirmed.

New Cotton Goods Firm Formed

Louis Lowinson and George Hussey have formed a concern that will conduct a fine and gray cloth brokerage business. They have taken offices at 72 Leonard St., New York. Mr. Lowinson was formerly head of Louis Lowinson & Co., and Mr. Hussey head of George Hussey & Co., both well known in the cotton goods trade.

Recent Changes At Mellon Institute

Dr. Edward R. Weidlein, director of Mellon Institute of Industrial Research, Pittsburgh, Pa., announced the appointment of Dr. Leonard Harrison Cretcher

to an assistant directorship in the institution. Dr. Cretcher, who, since 1926, has been serving as head of the Institute's Department of Research in Pure Chemistry, is a specialist in organic chemistry and will have supervisory charge of a group of industrial fellowships that are concerned with problems in organo-chemical technology.

Dr. Lawrence Wade Bass, who, for two years, has been a member of the executive staff of Mellon Institute of Industrial Research, Pittsburgh, Pa., has resigned, effective Feb. 1, to accept the post of Assistant Director of Research of the Borden Co., New York, N. Y.

Thomas S. Bernie Co. Succeeds Colter & Bernie

Thomas S. Bernie, for over 20 years connected with and former president and treasurer of Colter & Bernie, Inc., hosiery commission merchants, New York, which concern is now in the process of liquidation, has formed a new company under the name of Thomas S. Bernie Co. The new company will handle practically the same accounts as were represented by Colter & Bernie, Inc., including the account of Portage (Wis.) Hosiery Co., manufacturers of bundle wool socks and mittens for the wholesale trade. Mr. Bernie will retain the office at 40 Worth Street.

Decrease in Cotton Exports From Egypt

The average weekly exports of cotton from Alexandria, Egypt during January were 19,000 Egyptian bales of about 750 lb., showing a reduction from the weekly exports during December which averaged 26,000 bales, according to a cable received by the Department of Commerce through the Department of State from Consul Earle H. Russell at Alexandria. The total exports from Sept. 1 to the end of January likewise declined to 431,000 bales from 479,000 bales exported during the corresponding period of the previous season.

Acme Yarn Co. Leases Enlarged Quarters

Acme Yarn Co., Inc., of 216 N. Main St., Providence, R. I., will be located on and after Feb. 16, at 178 Valley St., Providence, where approximately 7,000 sq.ft. of floor space has been rented in one of the American Woolen Co.'s buildings. Acme Yarn Co., Inc., jobber of silk, rayon, cotton, worsted, wool and mohair yarns, is a consolidation of the Consolidated Yarns, Inc., and S. Bander & Co., Inc., Providence, R. I.

Carpet Club Elects Officers

E. E. W. Cruickshank, Strawbridge & Clothier, was re-elected president of the Philadelphia Carpet & Upholstery Club at a meeting Feb. 9. This will be Mr. Cruickshank's fourth term in that office. O. T. McMaster and Charles Glanz were returned as vice-president and treasurer respectively and Alex Foote was re-elected secretary.

Danville Returning to Normal After Strike

Since the termination, on Jan. 29, of the four-months strike at the Riverside and Dan River Cotton Mills, at Danville, Va., that city has been rapidly returning to normal. The withdrawal of State troops this week eliminated the last visible reminder of industrial strife.

Naturally, in the aftermath of the strike came, verbal disagreement as to "who won the war." The clash centered mostly on the union's claim that recent statements by H. R. Fitzgerald, president and treasurer of the mills, and the action of the management in taking old employees back without raising the question of union membership, made it plain that "this principle of labor (the right to organize) is being respected."

Mr. Fitzgerald denied flatly that there had been any agreement between the mills and the union to end the strike, and authorized the following statement:

"I, of course, know nothing of what representations have been made to some of our former employees by their so-called leaders. Neither myself nor anyone else representing the Riverside and Dan River Cotton Mills has entered into any agreement of any nature, either directly or indirectly, with any individual, organization or group of individuals. We have made no agreements, nor are we under any obligations, expressed or implied, to employ any individual or group of individuals. Our company has consistently refused to negotiate or discuss such a matter with any organization or representative of such an organization. There has been absolutely no departure from such policy.

"It has always been our policy to give preference to such of our loyal employes whose record entitles them to be considered employes of our company."

Majority opinion inclines to the belief that the result of the strike represented defeat for the United Textile Workers of America. Certainly, that organization accomplished none of the objectives for which the strike was promulgated, and its four months' duration resulted in no concessions on the part of the mill management.

Howell Cheney Explains Wage Cut

Remarking that the firm's recent wage cut announcement had led to some misunderstanding in one department, Howell Cheney, of Cheney Bros., South Manchester, Conn., has issued the following statement:

"An entirely unfounded rumor gained headway that the company had intended the present reduction as a forerunner of another reduction which would possibly total 20%, and a further rumor was thrown out that certain individuals had been cut under the present reduction, 22%.

"The company can authoritatively state that in making the present reduction, which has actually averaged 10.1% for the whole plant, no individual has been cut more than 14% in total hourly earnings. These figures include all adjustments of bonus and credit rating. To effect an average of 10%, many individuals have been cut less than 10%.

"No further wage reduction is contemplated."

Upholstery Weavers In Philadelphia Strike

Approximately 2,000 upholstery workers recently stopped work in Philadelphia in protest against a wage cut of 14% that had been placed in effect by manufacturers after a ruling by an impartial body consisting of representatives of the Industrial Research Dept., of the University of Pennsylvania. Nearly 30 mills were affected. Several closed down all departments completely. The walkout of unionized weavers, beamers, winders, burlers, dyers and loom-fixers actually means that about 4,000 are out of work, as other departments are affected.

Sees Reduced Building Costs Facing Possible Advance

A decline of 20% in building costs from 1925 to the present time is indicated in a survey by Wm. Joshua Barney, president of Barney-Ahlers Construction Corp., New York, reported recently in *Engineering News-Record*. The survey is limited to the New York area but involved reports from 44 builders or contractors.

The decreases gathered from these replies may be summarized for the principal items of cost in a building as follows:

DECREASES IN BUILDING COST FROM 1925 TO DATE

Item	Per Cent Decrease
Excavation	40.0
Piles	10.0
Tiles and foundations	10.0
Steel frame	24.6
Concrete frame	9.4
Brick and tile	24.3
Heating	10.0
Electrical	25.0
Plumbing	15.0
Elevators	15.0
Painting	10.0
Roofing	23.0
Doors	4.5
Profits	5.1

Applying these decreases to the quantities of different classes of work in buildings of various types, a fairly accurate trend is established for general building cost. Such a weighting of the building dollar shows that the present cost is 80.35%. In other words, building costs today are 20% below 1925 costs. Mr. Barney states that of course individual experiences may show variation from the average.

"It is easy to visualize," writes Mr. Barney, "that within a comparatively few months building costs will advance from 5 to 10%, going probably higher as business conditions become more normal. That a rapid rebound in construction costs is entirely probable is well supported by experience in the last depression period (1921)."

Consider Health Angle of Knitwear Returns

The question of hygiene involved in the purchase and return of next-to-the-skin garments, is occupying the attention of the knitted outerwear industry, states the January "Bulletin" of the National Knitted Outerwear Association.

"It is obvious," the publication comments, "that bathing suits, corsets, headwear, bedding, underwear, and other intimate merchandise, once taken away from a store, and once used even though as a try-on, may become a serious menace to health if returned and sold without complete sterilization.

"Representatives of associations whose members manufacture the above merchandise, together with representatives of retail organizations, have been studying the question of returns from the health angle."

The interested associations plan to hold a meeting very soon, looking to development of effective local or State regulations, to provide general protection against the spread of disease by prohibiting first, the return of merchandise after once sold except for defects in manufacture; and secondly, the resale of such merchandise unless sterilized.

Japan's Cottons Exports About Four Times Those of U. S.

The growing domination by Japan of the world's cotton textile markets, as reported by Charles K. Moser, chief of the Far East Section of the U. S. Bureau of Foreign and Domestic Commerce, is given emphasis by a comparison of the latest official figures covering the respective cotton textile exports of American and Japanese mills. These figures show that Japan's cotton textile exports are now at a rate approximating four times those of the United States.

The Moser report followed a special investigation of the Oriental textile industry and markets for the Pepperell Mfg. Co. of Boston, for which Mr. Moser was detached from the Department of Commerce.

Rates so far as reported in 1930 indicate a total of 434,690,000 sq.yd. for American exports for the year, as against an indicated 1,630,262,000 sq.yd. for Japan. Also, while American cotton textile exports in 1930 declined about 28.7% in the face of the world trade depression, Japan's exports showed a loss of but 6.5%.

Semi-Annual Index

The index to TEXTILE WORLD, Volume 78, covering the issues from July 5 to Dec. 27, 1930, inclusive, is now off the press and is available, without charge to readers on request. Address TEXTILE WORLD, Tenth Ave. at 36th St., New York.

Textile Chemists Meet

(Continued from page 18)

"The dyer, after all the care and caution in choosing his dyes in regard to rate of exhaustion, fastness test and ability to dye various fibers, will often find cases where rayon from the same source will more or less resist certain dyes, particularly those of the substantive group. I find this particular characteristic to be caused from the finishing material used by the manufacturer, usually free fatty acids. Oleic acid on the rayon can readily be distinguished by its peculiar pungent odor. This fault can be overcome by the use of soda ash or ammonium hydroxide in the dyebath.

"In the dyeing of direct colors, the dyebath may be started cold. In fact, for very light shades of tan, gray, and rose it is best not to exceed 125° F. in a 2 to 4% soap bath for the entire dyeing period. This will give level shades, where at a higher temperature streakiness would occur. For the dyeing of heavy shades temperatures of 150 to 160° F. will give level-dyed shades with a much better exhaustion of the dyebath. The dyeing may be completed at this temperature with the addition of either common or glauber salt. For best results the amount of salt, with the exception of black, should not exceed 10%. Heavier percentages must be given extra washings to get rid of this salt to prevent crystallization on the fiber.

"The reaction of dyes to drying must be watched carefully by the dyer so that he may make necessary variations in his matchings. I attribute the darkening of rayon colors in the dryer to the physical change in the rayon, such as the contraction of the diameter of the filament. Not only must the dyer have the temperature of the dryer under his control for the sake of color, but it must leave the physical properties of the rayon unchanged. Too high temperatures produce what is known as case hardening, a wire-like feel to the fiber, that will not give a soft or flexible surface to the finished product. I consider a temperature of 160° F. over a period of eight hours with a downward current of hot air, which is not too strong to cause tangling of the skeins, sufficient to dry any rayon."

Window display featuring DuPont spun rayon. The beach pajamas are made of Du Shana, a shantung weave. The coin dot fabric in foreground is Du Basque, a basket weave

Finishing of Cottons Gains Over December

The National Association of Finishers of Cotton Fabrics have issued the following monthly statement showing percentage of normal average capacity operated in the Industry:

	January			
	1931 (5 Weeks)		1930 (4 Weeks)	
White and dyed combined....	49%	47%–white 53%–dyed	60%	49%–white 51%–dyed
Fast black..	14%		20%	
Logwood black....	42%		43%	
Prints.....	65%		71%	
	December			
	1930 (4 Weeks)		1929 (4 Weeks)	
White and dyed combined....	40%	48%–white 52%–dyed	51%	50%–white 50%–dyed
Fast black..	12%		19%	
Logwood black....	37%		42%	
Prints.....	59%		71%	

Elect Wellington Sears Officers

Wellington Sears Co., Boston and New York, a corporation succeeding the partnership of Wellington, Sears & Co., has elected the following officers: President, Harry L. Bailey; vice-president, Norman S. Hope; vice-president, John H. Bennett; treasurer and clerk, Charles O. Richardson, and assistant treasurer, Everett W. Stone.

Landman In New Offices

G. F. Landman & Son have opened new offices at 112 S. 16th St., Philadelphia. This concern handles a complete line of knitting and weaving yarns spun by the Centredale (R. I.) Worsted Mills.

New Books

DICTIONARY OF COLOR; by Maerz and Paul; 207 pages. 9x12 inches. 56 colored plates. McGraw-Hill Book Co., Inc., 370 Seventh Ave., New York. $12.

This work, which is intended as a reference book for those who wish to relate colors with the names by which they are commonly identified, contains the most extensive range of colors as yet published, together with a list of practically all recorded color names in use up to this time in the English language. Some 7,000 colors are reproduced in non-fading ink, and over 3,000 color names are discussed. In addition to the "dictionary of color" and the colored plates, the book contains notes on the standardization of color names, comments on the sources of names included, hints on color matching, and an extensive bibliography of color. The arrangement of the color plates is excellent and the complete range of colors is presented in small-step differences which, in most cases, are just perceptible to the eye. The book will without doubt prove of value to users of color and color terms in many industries.

THE CONDENSED CHEMICAL DICTIONARY; compiled and edited by the editorial staff of the *Chemical Engineering Catalog*, Francis M. Turner, editor 2nd edition, revised and enlarged under supervision of Thomas C. Gregory, editor, and Isabelle M. Welch, assistant editor. 551 pages. The Chemical Catalog Co., Inc., 419 Fourth Ave., New York. $10.

The second edition of this handy reference book has not only been brought up to date by the inclusion of definitions of new chemicals which have been developed in the last few years, but has been made more encyclopedic in scope. While the arrangement of data remains the same as in the first edition, the information on the uses of the various chemicals has been materially increased. To avoid inaccuracy, many of the items, such as the definition of fire hazards, were contributed by or submitted to authorities in various fields. The book is intended for the use of students, exporters, importers, plant superintendents, salesmen of chemicals, chemical engineers, and chemists who may not be specialists in the subjects consulted. The dictionary should prove invaluable to practically everyone who is connected with the chemical and allied industries.

FACHADRESSBUCHVERLAG: Address book of the German textile industry. Edited by Dumont Schauberg, Langgasse 1-3, Cologne, Germany. Price, 24 Reichsmarks.

This latest edition of the German textile directory has many new features. The method of classifying firms according to province location has been eliminated in favor of classification by towns, which are arranged alphabetically. Another new feature is part six, which comprises a special register of the numerous purchasing houses. The book covers more than 50,000 firm entries and gives such details as telephone numbers, codes, bank connections, etc. The entries also carry totals of spindles, looms, operatives, motors, dyeing, bleaching, branch establishments, year of foundation officers of firms, etc. Following are a few of the sub-divisions: wholesalers, importers, exporters, agencies, raw material, waste and old material dealers, together with credit organizations, special schools and textile associations. This volume is said to contain so much more detail than its predecessors that it is twice the size of the previous edition.

Business News

John J. McCloskey, Inc., Moves Phila. Office to Larger Quarters

John J. McCloskey, Inc., manufacturers and dealers in rebuilt textile machinery for the woolen, worsted and cotton industries, have moved their Philadelphia offices from 128 Chestnut St. to 138 South Front St.; the move was due to business expansion, the new quarters being considerably larger.

F. Sails New Atwood Machine Manager at Charlotte, N. C.

The Atwood Machine Co., Stonington, Conn., has appointed Frederick Sails as manager of its southern office at Charlotte, N. C. Mr. Sails was formerly with the Hopedale Mfg. Co., Milford, Mass., and more recently with Standard Looms, Inc., in a selling capacity, covering the southern territory.

West Allis To Sell for General Refractories

The General Refractories Co., Philadelphia, Pa., has appointed the West Allis Fuel & Supply Co., of West Allis, Wis., as distributors of their products. These distributors will operate in Milwaukee and Waukesha Counties, handling products manufactured in the Evens & Howard Division, St. Louis, Mo. The line includes "Acme" and "St. Louis" brands of fire brick and "Briklok" high temperature mortar. They will also distribute "Grefco" chrome base high temperature mortar and "Grefco" plastic chrome ore.

R. B. McColl President of McIntosh & Seymour

William C. Dickerman, chairman of the Board of McIntosh & Seymour Corp., announces the retirement of A. E. Ballin, as president and director of the corporation. At a meeting of the board of directors held Feb. 2, R. B. McColl was elected president and director. Mr. McColl was born in Kilmarnock, Scotland, in 1882, where he attended the Kilmarnock Academy, and the Science and Art College. In January, 1922, Mr. McColl was associated with the American Locomotive Co. and was attached to the New York office, until June of that year, when he was appointed assistant manager of the Schenectady plant. In 1925 he was appointed manager of the Schenectady plant, which position he held until his present promotion. Mr. McColl is a member of the Institute Mechanical Engineers, London, England, and many American clubs.

Wilckes, Martin, Wilckes Now Division of Swann Corp.

The Wilckes, Martin, Wilckes Co., manufacturers of industrial chemicals for the textile trades, among other products, has become a division of The Swann Corp., it is disclosed by Theodore Swann. Besides adding lamp black to the line of Swann products, the Wilckes, Martin, Wilckes phosphate plant at Camden, N. J., provides the Swann group of chemical companies with a chemical producing point in the eastern territory.

The New York office of Wilckes, Martin, Wilckes will be moved about March 1 from 135 Williams St. to the Graybar Building, and will be consolidated with the Swann offices now located there.

Ferdinand Wilkes, formerly president of Wilckes, Martin, Wilckes Co. has been named to the board of The Swann Corp. The new board of directors of Wilckes, Martin, Wilckes Co. is composed of Theodore Swann, Luther Martin, Edward Van Berlo, C. M. Jesperson and John A. Chew. The new officers of the company are Luther Martin III, chairman of the board; Edward Van Berlo, president and treasurer; George T. Short, vice-president; Luther Martin IV, secretary; E. G. Archer, assistant secretary and assistant treasurer; Robert Hawkins, assistant secretary and assistant treasurer.

Useful Catalogs

Temperature and Level Control. Saco-Lowell Shops, Boston. Saco-Lowell monthly bulletin contains articles on temperature and level control for size boxes, one-process picker, and maintenance and inspection of picking and carding machinery.

Stitches. Union Special Machine Co., Chicago. Booklet presents complete non-technical description of stitch formations, analyzing their merits as regards strength, elasticity, waterproofness, thread consumption and unraveling.

Loaders. Stephens Adamson Mfg. Co., Aurora, Ill. Characteristics and uses of "S-A" box car loader, together with specifications, are presented in new folder.

General Electric Catalogs. Catalogs on industrial control, limit switch for control circuits, heating devices, drum controllers, non-metallic gears and blanks (price list), synchronous motors, fabroil gears (price list).

Cork. Armstrong Cork Co., Lancaster, Pa. Booklet discusses industrial uses and applications of cork.

Internal Combustion Engines. Worthington Pump and Machinery Corp., New York. This 43-page catalog gives a minute description of the new vertical four-cycle, air-injection Diesel engine now offered by this company. The catalog is profusely illustrated with photographs and diagrams of equipment.

Manuals on Manufacture. Union Special Machine Co., Chicago. Handbooks describe seam construction, production systems, factory layouts, sewing equipment, and other matters concerning manufacture of shirts and knitted underwear.

Speed Transmission. Reeves Pulley Co., Columbus, Ind. Services and advantages of Reeves electric automatic control are presented, with detailed description of this equipment.

Weaving and Knitting. Union Special Machine Co., Chicago. Problems confronting weavers and knitters, especially manufacturers of pajama suits, lace goods and sweaters, are discussed in recent issue of "The Needle's Eye." One article on increasing machine speed to 4,250 r.p.m. is of particular interest to sleeving manufacturers.

Pointers for Profit

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